SAMSUNG

User Guide

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Chapter 1.
Getting Started

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Before You Start

Before reading the User Guide, first check the following information.

- Optional items, some devices and software referred to in the User Guide may not be provided and/or changed by upgrade.
  Note that the computer environment referred in the User Guide may not be the same as your own environment.
- The pictures used for the cover and the main body in the User Manual are those of the representative model of each series and may differ from the actual appearance of the product.
- This guide decribes procedures for using both the mouse and the touchpad.
- This manual has been written for the Windows 7 operating system. The descriptions and figures may differ depending on the installed operating system.
- The User guide supplied with this computer may vary depending on your model.

Using the software

- The software described in the main text can be launched using the following menu path.
  - **Start > All Programs**
  - **Start > All Programs > Samsung**
  - From the **Start Screen**, right-click any area and select **All Apps** in the bottom right corner. Then, click a desired program. Or you can simply launch **Quick Starter** to do the same.
- When the programs are not installed, select **Samsung Recovery Solution > System Software** to install the programs. (Only for models supplied with Samsung Recovery Solution)

Safety Precaution Notations

Icon	Notation	Description
	Warning	Failure to follow instructions marked with this symbol, may cause personal injury and or fatality.
	Caution	Failure to follow instructions marked with this symbol, may cause slight injury to yourself or damage your property.

Text Notations

Icon	Notation	Description
	Caution	Content included in this section includes information required about the function.
	Note	Content included in this section includes helpful information to use the function.

Copyright

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Samsung Electronics Co., Ltd. owns the copyright of this manual.

No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, without the consent of Samsung Electronics Co., Ltd.

The information in this document is subject to change without notice due to improving the performance of the product.

Samsung Electronics shall not be liable for any data loss. Please take care to avoid losing any important data and backup your data to prevent any such data loss.

OS and Software Support

If a problem occurs because of the reinstallation of other operating systems(OS) or a previous version of a OS pre-installed on this computer, or a software that does not support the OS, the company will not provide technical support, a replacement or refund, and if our service engineer visits you due to this problem, a service charge will be applied.

Please use your computer with the original factory OS. If you install an OS other than the factory OS, data may be deleted or the computer may not start.

About the Product Capacity Representation Standard

About the capacity representation of the storage

The capacity of the storage device (HDD, SSD) of the manufacturer is calculated assuming that 1KB=1,000 Bytes.

However, the operating system (Windows) calculates the storage device capacity assuming that 1KB=1,024 Bytes, and therefore the capacity representation of the HDD in Windows is smaller than the actual capacity due to the difference in capacity calculation.
(E.g. For a 80GB HDD, Windows represents the capacity as 74.5GB, 80x1,000x1,000x1,000 byte/(1,024x1,024x1,024)byte = 74.505GB)

In addition, the capacity representation in Windows may be even smaller because some programs such as Recovery may reside in a hidden area of the HDD.

About Memory Capacity Representation

The memory capacity reported in Windows is less than the actual capacity of memory.

This is because BIOS or a video adapter uses a portion of memory or claims it for further use.
(E.g. For 1GB(=1,024MB) memory installed, Windows may report the capacity as 1,022MB or less)

Safety Precautions

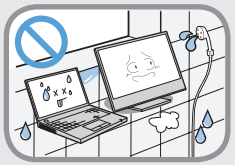
For your security and to prevent damage, please read the following safety instructions carefully.

Since this is commonly applied to Samsung computers, some pictures may differ from actual products.

Warning

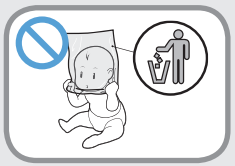
Failure to follow instructions marked with this symbol may cause personal injury and even fatality.

Installation Related



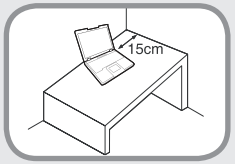
Do not install the product in places exposed to humidity such as bathrooms.

There is a danger of electric shock. Use the product within the operating conditions specified in the Manufacturers User Guide.



Keep the plastic bags out of the reach of children.

There is a danger of suffocation.

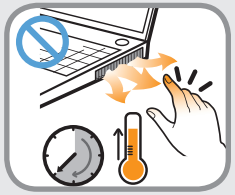


Keep a distance of 15cm or more between the computer and the wall and do not place any objects between them.

This may increase the internal temperature of the computer and may cause an injury.

Do not install the computer on a slant or a place prone to vibrations, or avoid using the computer in that location for a long time.

This increases the risk that a malfunction or damage to the product will occur.



Do not touch the computer vents or the connected AC adapter for extended periods while the computer is on.

Contact with the vent or the connected AC adapter for extended periods may result in low-temperature burns, such as redness on the skin.

Avoid blocking the vent at the bottom or side of the computer when using it on a bed or cushion.

If the vent is blocked, there is a danger of damaging the computer or overheating the inside of the computer.

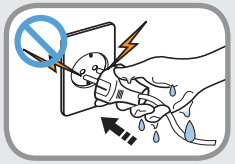
Safety Precautions

Warning

Failure to follow instructions marked with this symbol may cause personal injury and even fatality.

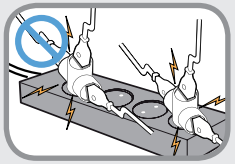
Power Related

The power plug and wall outlet figures may differ depending on the country specifications and the product model.



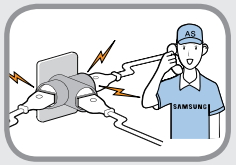
Do not touch the main plug or power cord with wet hands.

There is a danger of electric shock.



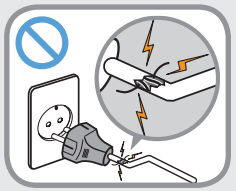
Do not exceed the standard capacity (voltage/current) of a multiplug or power outlet extension when using it for the product.

There is a danger of electric shock or fire hazard.



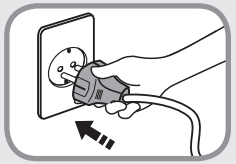
If the power cord or power outlet makes a noise, disconnect the power cord from the wall outlet and contact a service center.

There is a danger of electric shock or fire hazard.



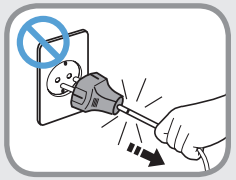
Do not use a damaged or loose main plug or power cord or power outlet.

There is a danger of electric shock or fire hazard.



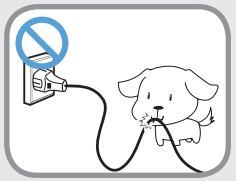
Plug the power cord firmly into the power outlet and AC adapter.

Failure to do so may cause fire hazard.



Do not unplug the power cord by pulling the cable only.

If the cord is damaged, it may cause electric shock.



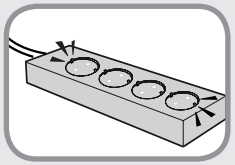
Do not bend the power cord excessively or do not place a heavy object over the power cord. It is especially important to keep the power cord out of reach of infants and pets.

If the cord is damaged, it may cause electric shock or fire.

Safety Precautions

Warning

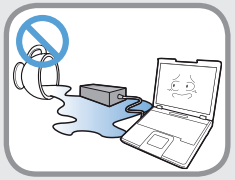
Failure to follow instructions marked with this symbol may cause personal injury and even fatality.



Connect the power cord to an outlet or multiple power plug (extended cable) with a ground terminal.

Failure to do so may result in electric shock.

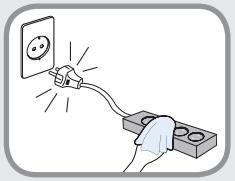
When the power supply is ungrounded, the current may leak resulting in electric shock.



If water or another substance enters the power input jack, AC adapter or the computer, disconnect the power cord and contact the service center.

If the notebook computer has an external type (removable) battery, separate the battery also.

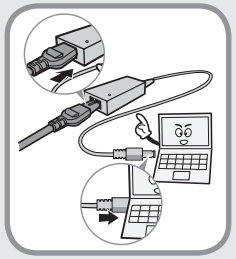
Damage to the device within the computer may cause electric shock or fire hazard.



Keep the power cord or outlet clean so that they are not covered with dust.

Failure to do so may result in fire.

AC Adapter Usage Precautions

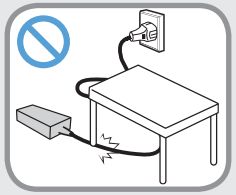


Connect the power cord to the AC adapter firmly.

Otherwise, there is a danger of fire due to an incomplete contact.

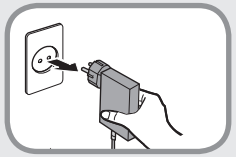
Use only the AC adapter supplied with the product.

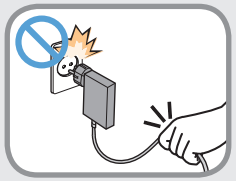
Using another adapter may cause the screen to flicker.



Do not place heavy objects on top of or step onto the power cord or AC adapter to avoid damaging the power cord or AC adapter.

If the cord is damaged, there is a danger of electric shock or fire.





Unplug the wall-mount AC adapter (adapter and plug intergrated type) from the wall outlet while holding the body and pulling it in the direction of the arrow.

If you unplug the adapter by holding and pulling the cable, the adapter may be damaged and an electric shock, explosive sound or spark may occur as a result.

Safety Precautions

Warning

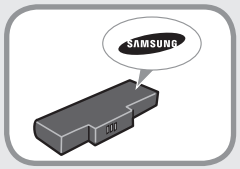
Failure to follow instructions marked with this symbol may cause personal injury and even fatality.

Battery Usage Related

Please charge the battery fully before using the computer for the first time.

Keep the battery out of the reach of infants and pets, as they could put the battery into their mouths.

There is a danger of electric shock or choking.



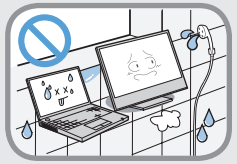
Use an authorized battery and AC adapter only.

Please use an authorized battery and adapter approved by Samsung Electronics.

Unauthorized batteries and adapters may not meet the proper safety requirements and may cause problems or malfunctions and result in an explosion or fire.

Do not use the computer in a badly ventilated location such as on bedding, on a pillow or cushion, etc, and do not use it in a location such as a room with floor heating as it may cause the computer to overheat.

Take care that the computer vents (on the side or the bottom) are not blocked especially in these environments. If the vents are blocked, the computer may overheat and it may cause a computer problem, or even an explosion.



Do not use the computer in a humid location such as a bathroom or sauna.

Please use the computer within the recommended temperature and humidity ranges (10 - 35ºC, 20 - 80% RH)

Do not close the LCD panel and put the computer into your bag to move it when it is still turned on.

If you put the computer into your bag without turning it off, the computer may overheat and there is a danger of fire. Shut the computer down properly before moving it.

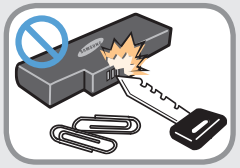
Safety Precautions

Warning

Failure to follow instructions marked with this symbol may cause personal injury and even fatality.

Never heat the product (or battery) or put the product (or battery) into a fire. Do not put or use the product (or battery) in a hot location such as a sauna, inside a vehicle exposed to the heat, and so on.

There is a danger of an explosion or fire.

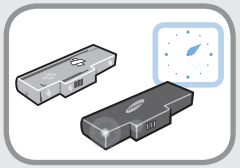


Take care not to allow metal objects such as a key or clip to touch the battery terminal (metal parts).

If a metal object touches the battery terminals, it may cause excessive current flow and it may damage the battery, or result in a fire.

If liquid leaks out of the product (or battery) or there is a funny smell coming from the product (or battery), remove the the product (or battery) the computer and contact a service center.

There is a danger of an explosion or fire.



To use the computer safely, replace a dead battery with a new, authorized battery.

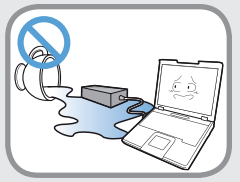
Usage Related

Disconnect all cables connected to the computer before cleaning it. If your notebook is an external & removable battery type, remove the external battery.

There is a danger of electric shock or damage to the product.

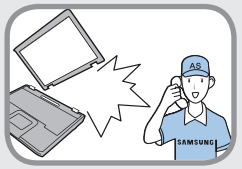
Do not connect a phone line connected to a digital phone to the modem.

There is a danger of a electric shock, fire or damage to the product.



Do not place any container filled with water or chemicals over or near the computer.

If water or chemicals enter the computer, this may cause fire or electric shock.



If the computer is broken or dropped, disconnect the power cord and contact a service center for a safety check.

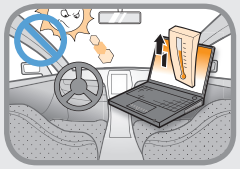
If the notebook computer has an external type (removable) battery, separate the battery also.

Using a broken computer may cause electric shock or fire hazard.

Safety Precautions

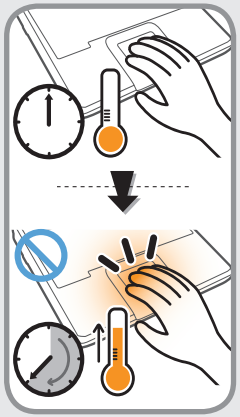
Warning

Failure to follow instructions marked with this symbol may cause personal injury and even fatality.



Avoid direct sunlight when the computer is in an air-tight location such as inside a vehicle.

There is a danger of a fire hazard. The computer may overheat and also present opportunity to thieves.



Do not use your computer for long periods of time while any part of your body is making direct contact with it. The temperature of the product may increase during normal operation.

This may result in harming or burning your skin.

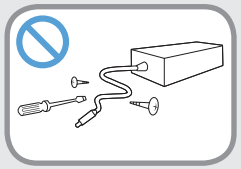
Upgrade Related

Be sure to upgrade the computer by yourself only if you have sufficient knowledge and ability.

If this is not the case, ask for assistance from the service center or an authorized engineer for the upgrade.

Be sure to upgrade only the parts specified in the user manual according to the procedures described in the user manual.

Do not disassemble any other parts or devices by yourself. There is a danger of a electric shock, fire or damage to the product.



Never disassemble the power supply or AC adapter.

There is a danger of electric shock.

When removing the RTC (Real Time Clock) battery, keep it out of the reach of children as they could touch and/or swallow it.

There is a danger of choking. If a child has swallowed it, contact a doctor immediately.

Safety Precautions

Warning

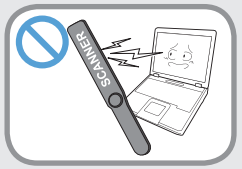
Failure to follow instructions marked with this symbol may cause personal injury and even fatality.

Before upgrading the computer, be sure to shutdown the computer first and then separate all connected cables. If the notebook computer has an external type (removable) battery, separate the battery, too.

Failure to do so may cause electric shock.

Security and Movement Related

Follow the instructions for the relevant location (e.g., airplane, hospital, etc.) when using a wireless communication device (wireless LAN, Bluetooth, etc.).



Avoid exposing a drive to magnetic fields. Security devices with magnetic fields include airport walk-through devices and security wands.

The airport security devices that check carry-on luggage, such as conveyor belts, use x-rays instead of magnetism and will not damage a drive.

When carrying the notebook computer with other items, such as the adapter, mouse, books, etc, take care not to press anything against the notebook computer.

If a heavy object is pressed against the notebook computer, a white spot or stain may appear on the LCD. Therefore, take care not to apply any pressure to the notebook.

In this case, place the notebook computer in a separate compartment away from other objects.

Caution

Failure to follow instructions marked with this symbol may cause slight injury or damage to the product.

Installation Related

Do not block the ports (holes), vents, etc. of the product and do not insert objects.

Damage to a component within the computer may cause electric shock or fire.

When using the computer with it lying on its side, place it so that the vents face upwards.

Failure to do so may cause the internal temperature of the computer to rise and the computer to malfunction or halt.

Do not place a heavy object over the product.

This may cause a problem with the computer. In addition, the object may fall and cause injury, or damage the computer.

Battery Usage Related

Dispose of worn-out batteries properly.

- There is a danger of fire or explosion.
- The battery disposal method may differ depending on your country and region. Dispose of the used battery in an appropriate way.

Do not throw or disassemble the battery and do not put it into water.

This may cause an injury, fire or explosion.

Use only a battery authorized by Samsung Electronics.

Failure to do so may cause an explosion.

Avoid contact with metal objects such as car keys or clips when keeping or carrying a battery.

Contact with a metal may cause excessive current and a high temperature and may damage the battery or cause a fire.

Charge the battery according to the instructions in the manual.

Failure to do so may cause an explosion or fire from damage to the product.

Do not heat the product (or battery) or expose it to heat (e.g., inside a vehicle during the summer).

There is a danger of explosion or fire.

Safety Precautions

Caution

Failure to follow instructions marked with this symbol may cause slight injury or damage to the product.

Usage Related

Do not place a candle, light a cigar, etc. over or on the product.

There is a danger of fire.

Use a wall outlet or multi-plug with a grounding part.

Failure to do so may cause electric shock hazard.

Make sure to have the product tested by a safety service engineer after repairing the product.

Authorized Samsung Repair Centers will carry out safety checks after a repair. Using a repaired product without testing it for safety may cause an electric shock or fire.

In case of lightning, immediately turn the system off, disconnect the power cord from the wall outlet and phone line from the modem. Do not use a modem or phone.

There is a danger of electric shock or fire.

Do not use your computer and AC-Adapter on your lap or soft surfaces.

If the computer temperature increases, there is a danger of burning yourself.

Connect only permitted devices to the connectors or ports of the computer.

Failure to do so may cause electric shock and fire.

Close the LCD panel only after checking if the notebook computer is turned off.

The temperature may rise and cause overheating and deformation of the product.

Do not press the Eject Button while the CD-ROM drive is in operation.

You might lose data and the disk might be suddenly ejected and could cause an injury.

Do not drop or knock the product.

This may result in injury or damage to the data.

Do not touch the antenna with an electricity facility such as the power outlet.

There is a danger of electric shock.

When handling computer parts, follow the instructions on the manual supplied with the parts.

Failure to do so may cause damage to the product.

Safety Precautions

Caution

Failure to follow instructions marked with this symbol may cause slight injury or damage to the product.

If the computer emits smoke, or there is a burning smell, disconnect the power plug from the wall outlet and contact a service center immediately. If your notebook is an external & removable battery type, remove the external battery.

There is a danger of fire.

Do not use a damaged or modified CD.

There is a danger of damaging the product or personal injury.

Do not insert your fingers into the PC Card Slot.

There is a danger of injury or electric shock.

Use recommended computer cleansing solution when cleaning the product and only use the computer when it is completely dried.

Failure to do so may cause electric shock or fire.

Emergency disk eject method using paperclip should not be used while the disk is in motion. Make sure to use the emergency disk eject method only when the Optical Disk Drive has stopped.

There is a danger of injury.

Do not place your face close to the Optical Disk Drive tray when it is operating.

There is a danger of injury due to an abrupt ejection.

Check CDs for cracks and damage prior to use.

It may damage the disc and cause problems with the device and injury to the user.

Do not leave the product in a location exposed to magnetic fields.

- A magnetic field may cause the product to work abnormally or the battery to discharge.
- The information saved on the magnetic tape of a credit card, phone card, bankbook, transportation tickets and so on can be damaged by a computer's electromagnetic field.

Caution

Failure to follow instructions marked with this symbol may cause slight injury or damage to the product.

Upgrade Related

Carefully touch a part or device of the product.

Failing to do so may result in damage to the product or injury.

Take care not to throw or drop a computer part or device.

Failing to do so may result in damage to the product or injury.

After the disassembly, be sure to close the cover and then connect the power.

Failing to do so may result in an electric shock from the exposed circuit.

Use parts authorized by Samsung Electronics only.

It may damage the product or result in fire.

Never disassemble or repair the product by yourself.

If the product is modified, disassembled or repaired by the user, the warranty is expired, a service fee will be charged and there is a danger of an accident.

Be sure to use an authorized Samsung Electronics service center.

To connect a device that is not manufactured or authorized by Samsung Electronics, inquire at your service center before connecting the device.

There is a danger of damaging the product.

Security and Movement Related

When moving the product, turn the power off and separate all connected cables first.

The product might be damaged or users may trip over the cables.

For long periods of not using the notebook computer, discharge the battery and separate the battery from the computer (for external & removable battery type).

The battery will be preserved at its best condition.

Do not operate or watch the computer while driving a vehicle.

There is a danger of a traffic accident. Please concentrate on driving.

Caution

Failure to follow instructions marked with this symbol may cause slight injury or damage to the product.

Cautions on Preventing Data Loss (Hard Disk Management)

Take care not to damage the data on a hard disk drive.

- A hard disk drive is so sensitive to external impact that an external impact may cause loss of data on the surface of the disk.
- Take extra care, because moving the computer or an impact on the computer when it is turned on may damage the data of the hard disk drive.
- The company is not liable for any loss of data on the hard disk drive.

Causes that may damage the data of a hard disk drive and the hard disk drive itself.

- The data may be lost when an external impact is applied to the disk while disassembling or assembling the computer.
- The data may be lost when the computer is turned off or reset by a power failure while the hard disk drive is operating.
- The data may be lost and irrecoverable due to a computer virus infection.
- The data may be lost if the power is turned off while running a program.
- Sudden impact or movement to the computer while the hard disk drive is operating may cause files to be corrupted or bad sectors on the hard disk.

To prevent data loss due to damage to the hard disk drive, please backup your data frequently.

Using the Power Supply in an Airplane

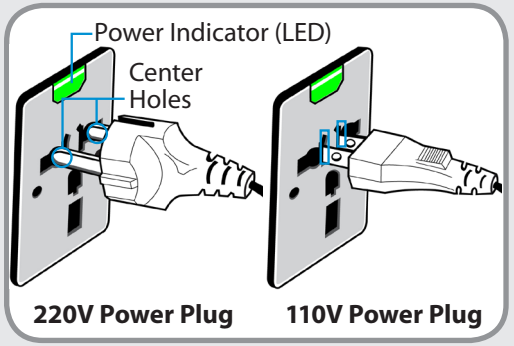
Since the power outlet type differs depending on the type of airplane, connect the power appropriately.

Since the representative figures of the power plug and the auto adapter are used, they may differ from the actual parts.

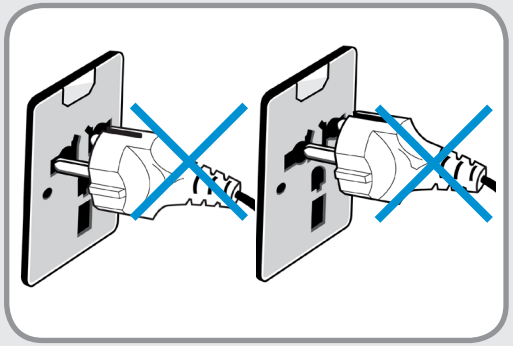
When Using the AC Power Plug

Connect the power plug pins perpendicular into the center of the power outlet.

- If the plug pins are not inserted into the center of the holes, the plug pins are only inserted up to half their length. In this case, reconnect the power plug.
- You have to insert the power plug into the outlet when the power indicator (LED) of the power outlet is lit green. If the power is connected properly, the power indicator (LED) remains green.
  Otherwise, the power indicator (LED) is turned off. In this case, unplug the power, check if the power indicator (LED) is green, and then reconnect the power plug.



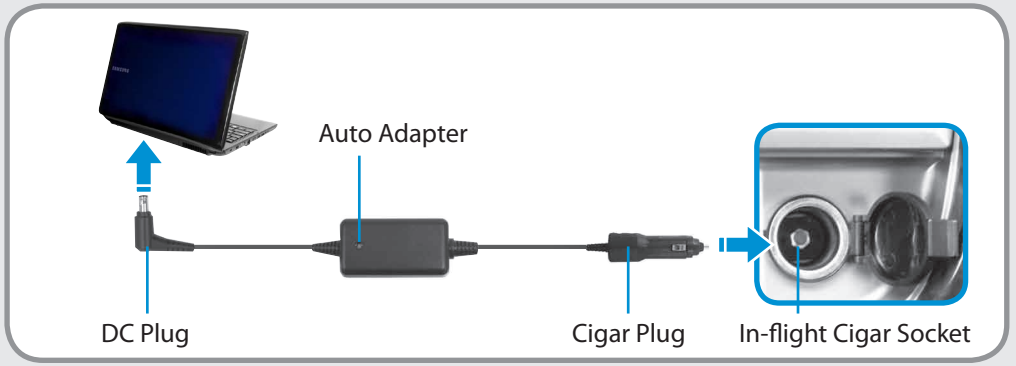
Good Example ○



Wrong Example ×

When Using the Auto Adapter

When a cigar socket is provided, you have to use the auto adapter (optional). Insert the cigar plug of the auto adapter into the cigar socket and connect the DC plug of the auto adapter to the power input port of the computer.



When Using the Airplane Charging Coverter

Depending on the airplane, you have to use the auto adapter and charging converter. Connect the airplane charging converter (optional) to the auto adapter (optional) and then insert the airplane power input jack into the power outlet.

Charging Converter
1 Connect this end to the auto adapter.
Connect the airplane power input jack to the power outlet of the airplane.
2

Proper Posture During Computer Use

Maintaining a proper posture during computer use is very important to prevent physical harm.

The following instructions are about maintaining a proper posture during computer use developed through human engineering. Please read and follow them carefully when using the computer.

Otherwise, the probability of repetitive strain injury (RSI) from repeated operations may increase and serious physical harm may be caused.

- The instructions in this manual have been prepared so that they can be applied within the coverage of general users.
- If the user is not included in the coverage, the recommendation is to be applied according to the user's needs.

Proper Posture

Adjust the heights of desks and chairs appropriate to your height.

The heights are to be adjusted so that your arm forms a right angle when you place your hand over the keyboard while sitting down on a chair.

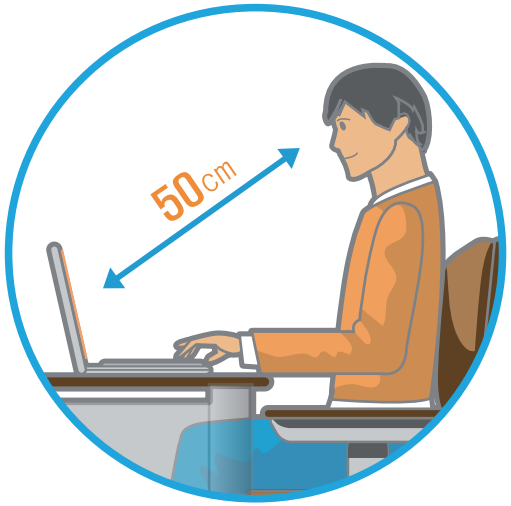
Adjust the height of the chair so that your heels are comfortably placed on the floor.

- Do not use the computer while you are lying down, but only while you are sitting down.
- Do not use the computer on your lap. If the computer temperature increases, there is a danger of burning yourself.
- Work while keeping your waist straight.
- Use a chair with a comfortable back.
- Keep the center of your leg weight not on the chair but on your feet when you are sitting on a chair.
- To use the computer while talking over the telephone, use a headset. Using the computer with the phone on your shoulder is bad for posture.
- Keep frequently used items within a comfortable work range (where you can reach them with your hands).

Proper Posture During Computer Use

Eye Position

Keep the monitor or LCD away from your eyes by at least 50cm.



- Adjust the height of the monitor and the LCD screen so that its top height is equal to or lower than your eyes.
- Avoid setting the monitor and LCD excessively bright.
- Keep the monitor and LCD screen clean.
- If you wear glasses, clean them before using the computer.
- When entering contents printed on a paper into the computer, use a static paper holder so that the height of the paper is almost equal to that of the monitor.

Hand Position

Keep your arm at a right angle as shown by the figure.

- Keep the line from your elbow to your hand straight.
- Do not place your palm over the keyboard while typing.
- Do not hold the mouse with excessive force.
- Do not press the keyboard, touchpad or mouse with excessive force.
- It is recommended to connect an external keyboard and mouse when using the computer for long periods of time.

Proper Posture During Computer Use

Volume Control (Headphones and Speakers)

Check your volume first to listen to music.

- Check if the volume is too loud before using headphones.
- It is not recommended using headphones for long periods of time.
- Any deviation from the equalizer default setting could cause hearing impairment.
- The default setting can be changed through software and driver updates without your intervention. Please check the equalizer default setting before first usage.

To prevent possible hearing damage, do not listen at high volume levels for long periods.

Use Time (Break Time)

- Take a break for 10 minutes or more after a 50-minute period when working for more than one hour.

Illumination

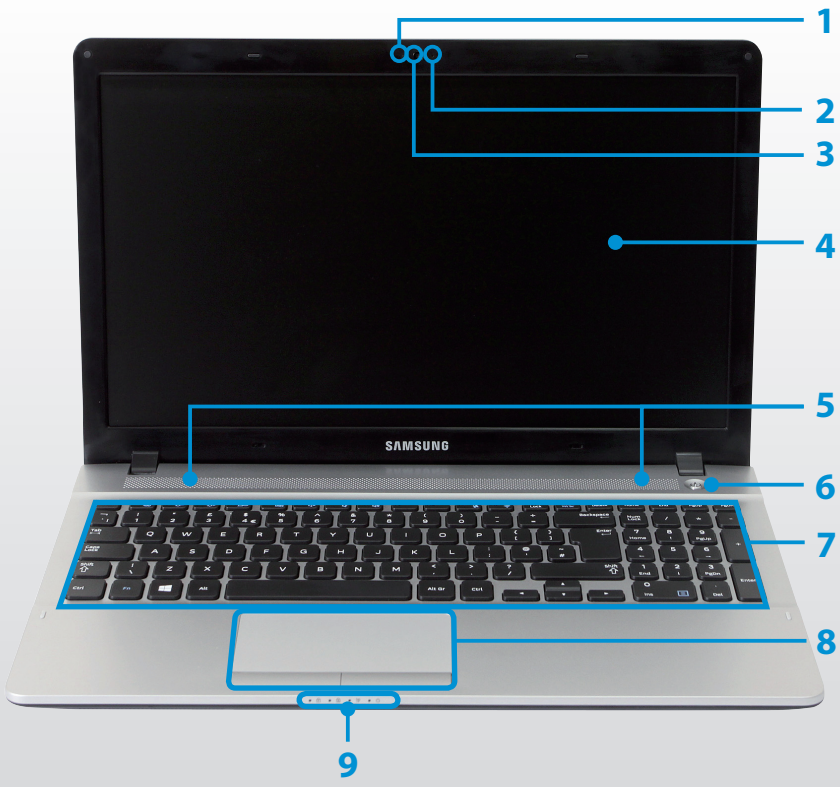
- Do not use the computer in dark locations. The illumination level for computer use must be as bright as for reading a book.
- Indirect illumination is recommended. Use a curtain to prevent reflection on the LCD screen.

Operation Condition

- Do not use the computer in hot and humid locations.
- Use the computer within the allowed temperature and humidity range specified in the User Guide.

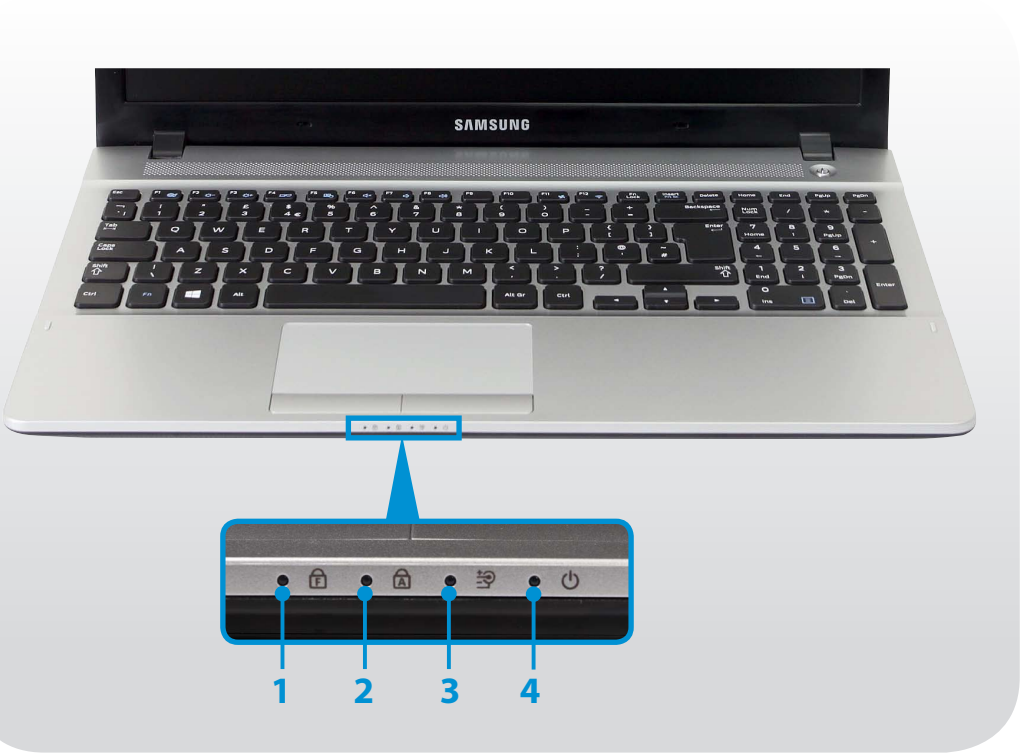
Front View

- The pictures used for the cover and the main body in the User Manual are those of the representative model of each series. Therefore the colors and appearance of the pictures may differ from the actual appearance of the product depending on the model.
- The items marked as optional may not be provided or may be provided in different locations.



1	Camera operating indicator (Optional)	This indicates the camera operating status.
2	Microphone (Optional)	You can use the built-in microphone.
3	Camera (Optional)	Using this camera, you can take still pictures and record video. You can take a picture or make a movie using the **Charms > Start > Camera**.
4	LCD	The screen images are displayed here.
5	Speaker	A device used to generate sound.
6	Power Button	Turns the computer on and off.
7	Keyboard	A device to enter data by pressing the keys.
8	Touchpad/ Touchpad Buttons	The touchpad and touchpad buttons provide functions similar to the mouse ball and buttons.
9	Status Indicators	Shows the operating status of the computer. The corresponding operating LED is lit when the corresponding function operates.

Status Indicators

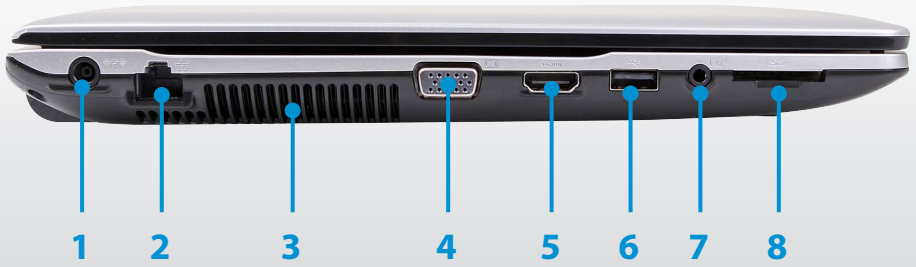


1	Fn Lock	This indicator displays the On/Off status of the Fn Lock function. **On**: You can use hot keys without holding the Fn key. **Off**: You must hold the Fn key before pressing a hot key in order to execute it.
2	Caps Lock	This turns on when the Caps Lock key is pressed allowing capital letters to be typed without holding the Shift button down. **On**: Upper-case alphabetic input **Off**: Lower-case alphabetic input
3	Charge Status	This shows the power source and the battery charge status. **Green:** When the battery is fully charged or the battery is not installed. **Red** or **orange:** When the battery is being charged. **Off:** When the computer is running on battery power without being connected to AC adapter.
4	Power	This shows the computer operating status. **On:** When the computer is operating. **Blinks:** When the computer is in Sleep mode.

Right View

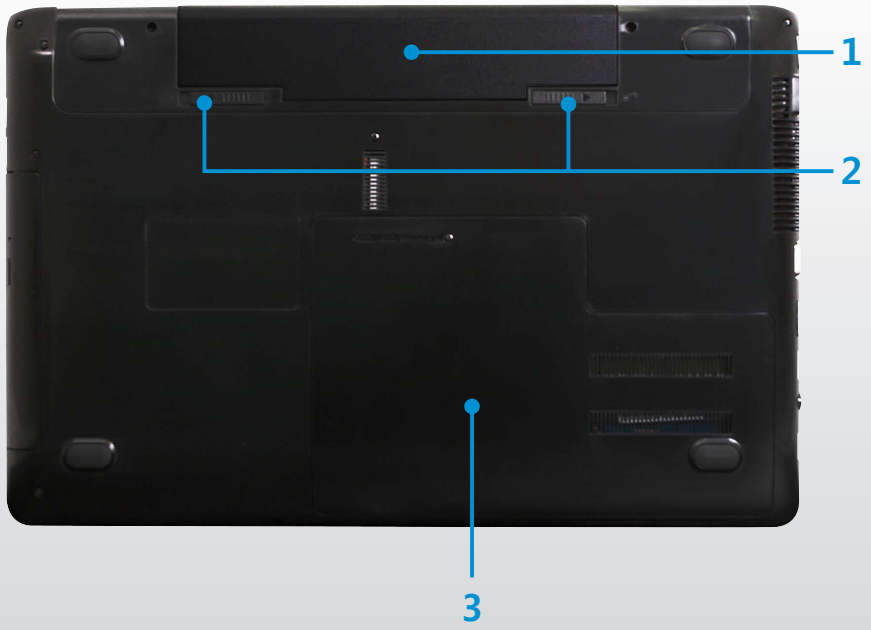
1	CD Drive (ODD) (Optional)	Plays CD or DVD titles. A CD Drive is optional. The installed drive may differ depending on the model specifications.
2	USB Port	You can connect USB devices to the USB port such as a keyboard/mouse, digital camera, etc.
3	Security Slot	You can secure the computer by connecting a lock and cable to the Security Slot.

Left View



1	DC Jack	A jack to connect the AC adapter that supplies power to the computer.
2	Wired LAN Port	Connect the Ethernet cable to this port.
3	Fan Vents	The internal heat of the computer is emitted through these holes. If the vents are blocked the computer may overheat. Avoid blocking the vents as this may be dangerous.
4	Monitor Port	A port used to connect a monitor, TV or projector supporting a 15pin D-SUB interface. You can connect a VGA adapter (optional).
5	Digital Video/ Audio Port (HDMI) (Optional)	You can connect an HDMI cable to this port. Using this port, you can enjoy digital video and audio on the TV.
6	USB Port (Optional)	You can connect USB devices to the USB port such as a keyboard/mouse, digital camera, etc. You can distinguish the type of port by color (blue for USB 3.0 and black for USB 2.0).
7	Ear-set / headset Jack	This is the jack for connecting an ear-set or headset.
8	Multi Card Slot	A card slot supports multi cards.

Bottom View



1	Battery	This is a Lithium-Ion rechargeable battery that supplies power to the computer.
2	Battery Latches	The latch used to remove or install the battery.
3	Memory Compartment Cover/Hard Disk Drive Compartment Cover	The main memory and hard disk drive is installed inside the cover.

Turning the Computer On and Off

Turning the computer on

1 Connect the **AC adapter**.

2 Lift the LCD panel up.

3 Press the **Power button** to turn the computer on.

4 If the power is turned on, the **power LED** is lit.

About Windows Activation

When you turn the computer on for the first time, the Windows activation screen appears.

Follow the activation procedures according to the instructions on the screen to use the computer.

Adjusting the screen brightness

When the computer runs on battery power, the LCD brightness is automatically set to low.

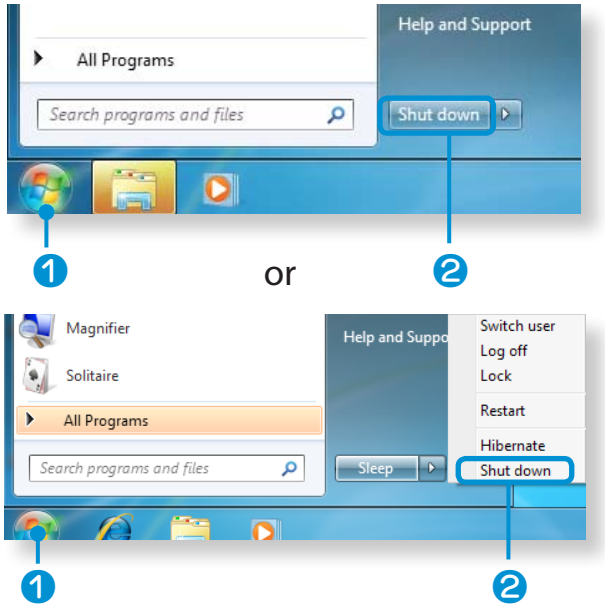
Press the Fn + F3 key combination to increase the screen brightness.

Turning the Computer On and Off

Turning the computer off

- Since the procedures to turn the computer off may differ depending on the installed operating system, please turn the computer off according to the procedures for the purchased operating system.
- Save all your data before clicking on **Shut down**.
- If **Easy Settings** is installed, the system shutdown location may differ.

Click ❶ **Start** > ❷ **Shut down mode** Shut down to shutdown the computer.



Chapter 2.
Using the computer

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Keyboard

Shortcut key functions and procedures are discussed in the following sections.

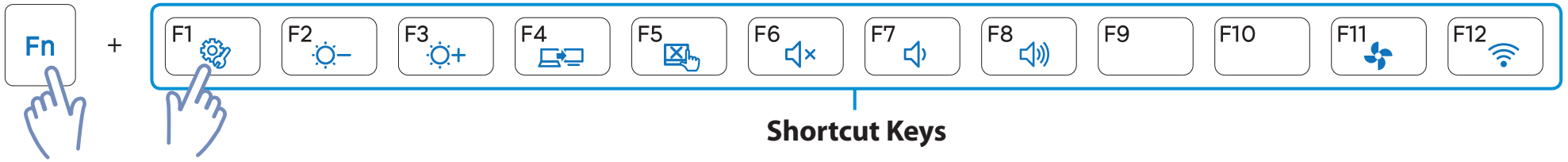
- The keyboard image may differ from the actual keyboard.
- The keyboard may differ depending on your country. The following mainly describes the shortcut keys.

Shortcut Keys

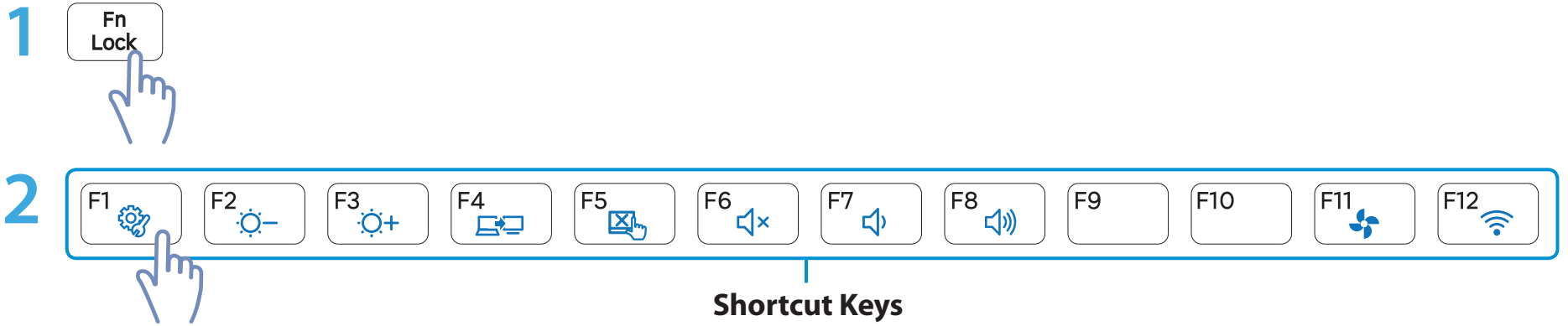
Press both the **Fn** key and hot key at the same time.

Alternatively, press the **Fn Lock** key as well as a hot key to use the hot key functions more easily.

► **Method 1**



► **Method 2**



Keyboard

Shortcut Keys	Name	Function
F1	Easy Settings	The Samsung software control program, the **Easy Settings**, is launched.
F2 F3	Screen Brightness Control	Controls the screen brightness.
F4	CRT/LCD	Switches the screen output to the LCD or external monitor when an external monitor (or TV) is connected to the computer.
F5	Touchpad	Turns the Touchpad function on or off. When using an external mouse only, you can turn the Touchpad off.
F6	Mute	Press this button to turn the audio on or off.
F7 F8	Volume Control	Controls the volume.
F11	Silent Mode	Reduces the Fan noise so that users can use the computer without hearing noise.
F12	Airplane Mode	Turns all wireless network devices on or off. (Only for models with a wireless network device.)

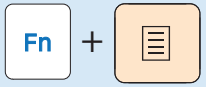
Other Function Keys

- If you press the **Fn Lock** key, you can use the hot key functions without pressing the **Fn** key.

  - **On**: You can use the hot key functions without pressing the Fn key.
  - **Off**: You can use a hot key function by pressing the Fn key + the hot key at the same time.

If the hot keys do not work properly, you have to install the **Easy Settings**.

Performs the right-click mouse function (touchpad).



Touchpad

The touchpad provides the same function as a mouse and the left and right buttons of the touchpad plays the role of the left and right buttons of a mouse.

To use the touchpad, the touchpad driver is required.

A built-in Windows driver and a driver provided by the manufacturer are provided. For a better performance, using the driver provided by the touchpad manufacturer is recommended.

The driver provided by the touchpad manufacturer is already installed in this product by default when you purchase this product. **When you reinstall Windows or change the operating system, using the driver provided by the corresponding manufacturer is recommended.**

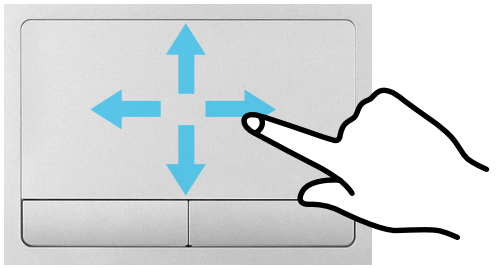
- Touch the touchpad with your fingers only.
  Anything other than your fingers, such as a ball-point pen, will not be recognized by the touchpad.
- If you touch the Touchpad or press the Touchpad buttons while booting up, the Windows boot time may be extended.
- Checking the touchpad manufacturer Click the **Start > Control Panel > Hardware and Sound > Mouse > Hardware** tab and check the device (E.g. Elan, Synaptics, etc.).
- The Windows driver provides basic touchpad functions (moving the pointer, clicking, etc.) but the gesture function is not supported.

Basic Touchpad Functions

Moving the cursor on the screen

Place your finger on the touchpad slightly and move your finger.

The mouse cursor will move accordingly. Move your finger in the direction you wish to move the cursor.

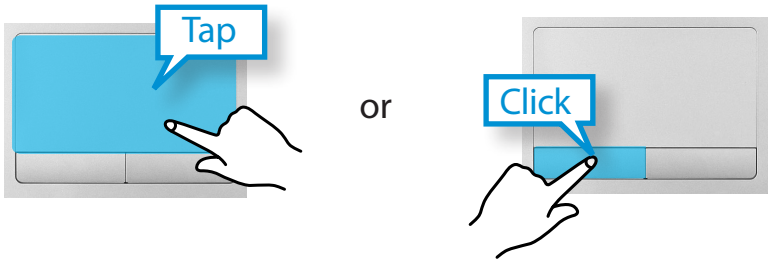


Touchpad

Click Function

Place a finger on the touchpad and click on an item once.

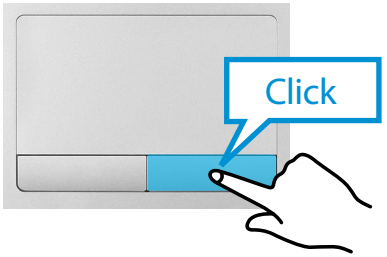
Alternatively, press the left button once quickly and release it.



Right Button Function

This corresponds to clicking the right mouse button.

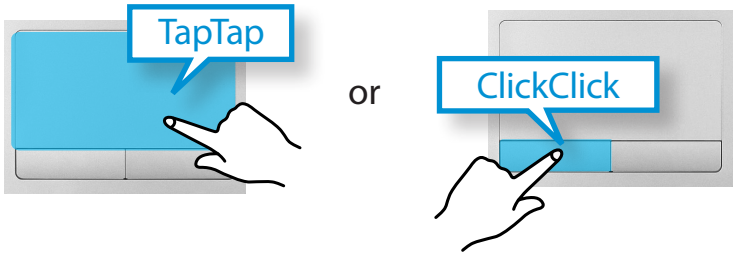
Press the right touchpad button once. The corresponding pop-up menu appears.



Double-Click Function

Put your finger on the touchpad and quickly tap twice with your finger on an item you want.

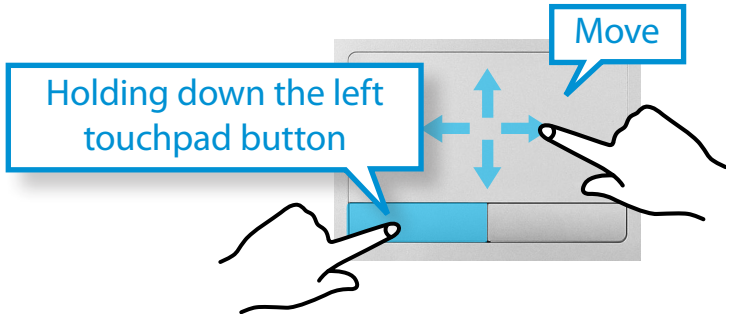
Alternatively, press the left touchpad button twice quickly.



Drag Function

Dragging refers to moving an item to another place after selecting it.

Press and hold down the left touchpad button over an item you want to drag and move the item to the new location.



The Gesture Function of the Touchpad (Optional)

- The Touchpad Gesture function may not be provided and the version of the function may differ depending on the model. Some usage procedures may differ depending on the version.
- For detailed usage procedures, refer to the description in the Touchpad Settings window.

Using the Touchpad, you can use the following additional Gesture functions.

- **Scroll function**
- **Zoom functions**
- **Page Move Function**

Configuring the Gesture Function

Some gesture functions may not be configured.

In this case, you can configure them using the following path.

1 ► **When using the Elan driver**

Click the **Start** > **Control Panel** > **Hardware and Sound** > **Mouse** > **Touchpad** > **Options** button.

► **When using the Synaptics driver**

Click the **Start** > **Control Panel** > **Hardware and Sound** > **Mouse** > **Device Settings** tab > **Settings** button.

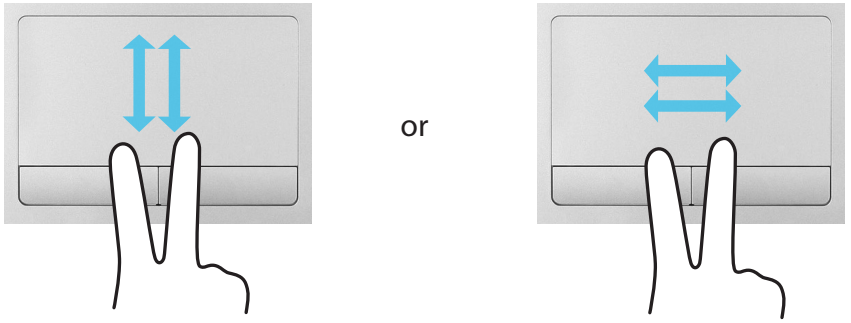
2 The Touchpad Settings window appears. Click over the corresponding item to select the item in the **Select an item** and click **OK**.

To cancel the Gesture function, unselect the corresponding item in the Touchpad Settings window and click **OK**.

The Scroll Function

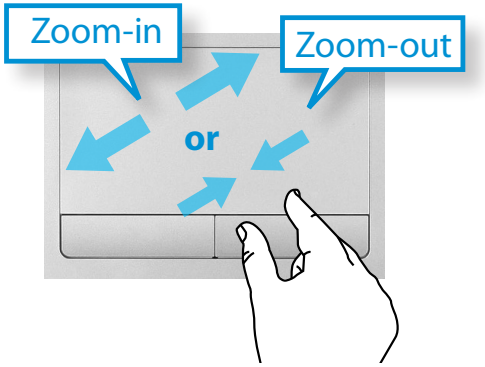
This function is the same as the scroll area of the Touchpad.

If you place two fingers over the Touchpad and move them up, down, left or right, the screen is scrolled up, down, left or right accordingly.



Zoom Functions

If you place two fingers over the Touchpad together or apart, the current image or text is zoomed in or out.



Touchpad

Touchpad On/Off Function

Locking with shortcut keys

If you want to use the mouse only without using the touchpad, you can turn the touchpad off.

To lock the touchpad function, press the Fn + F5 keys.

You can set the touchpad and touchpad button settings in the tabs that appear when clicking **Start > Control Panel > Hardware and Sound > Mouse**.

Auto-locking when connecting USB mouse

► **When using the Elan driver**

Click **Start > Control Panel > Hardware and Sound > Mouse > Touchpad**, and check the **Disable When external USB mouse plug in** option. This will turn the touchpad off when a USB mouse is connected.

► **When using the Synaptics driver**

Click **Start > Control Panel > Hardware and Sound > Mouse > Device Settings**, and check the **Disable internal pointing device when external USB pointing device is attached** in option. This will turn the touchpad off when a USB mouse is connected.

This auto-locking function is not provided for some models.

CD Drive (ODD, Optional)

If your computer does not have a CD drive, you can purchase an external CD drive.

- Do not insert a cracked or scratched CD.
  Otherwise, the CD may break and damage the optical disk drive when the CD rotates at a high speed.
- When you clean a CD or DVD title, wipe with a soft cloth from inside to outside.
- Insert a Mini CD into the center of the CD drive.
- The figures used for the description are of a representative model. Therefore the figures may differ from the real ones.
- Using a CD that is not in the shape of a circle is not recommended.

Using CD Drive

1 Press the **Eject** button of the optical disk drive at the side of the computer.

2 When the CD tray opens, insert a CD or DVD and push the tray in until it clicks.

3 Push the CD tray inward until it clicks.

The CD drive status indicator is turned on.

- A CD drive's reading and writing speed may differ depending on the condition and type of the media.
- To eject a CD when the CD drive does not work or the computer is off, place the end of a paper clip ( ) into the Emergency Hole until the CD tray is ejected.

Multi Card Slot

Using the multi-card slot, you can read and write data on various types of memory cards.

When you insert a memory card, make sure to insert the memory card in the correct direction. Pushing an incorrectly inserted memory card may damage the card itself or the slot.

- You can use memory cards as a removable disk and conveniently exchange data with digital devices such as a digital camera, etc.
- Separately purchase memory cards of your desired capacity.
- The color of the multi-card slot may differ from the picture in this manual.
- Before using the slot, remove the dummy card from inside the slot. (Only for models providing dummy cards.)
- Insert the memory card into the multi-card slot in the direction printed on the slot.
- For memory cards marked with '*', you must insert them into a specified adapter and then insert the adapter into the multi-card slot.
  Inserting such memory cards directly into the multi-card slot without using a specified adapter may damage the computer.
- The computer may not recognize the device depending on the status of the specified adapter.
- The data transfer rate may diff er depending on the specification of the memory card.

Example) SD Card

Memory Card Naming

The following table shows the full names of memory cards for each abbreviation.

Abbreviation	Memory Card's Name
SD	Secure Digital
***mini SD**	mini Secure Digital
***micro SD**	micro Secure Digital
SDHC	Secure Digital High Capacity
***mini SDHC**	mini Secure Digital High Capacity
***micro SDHC**	micro Secure Digital High Capacity
SDXC	Secure Digital eXtended Capacity
***micro SDXC**	micro Secure Digital eXtended Capacity

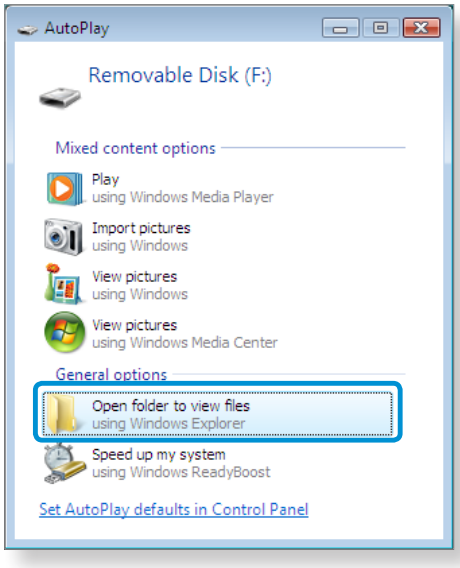
Multi Card Slot

Using the card

1 Insert a memory card into the multi-card slot in the correct direction.

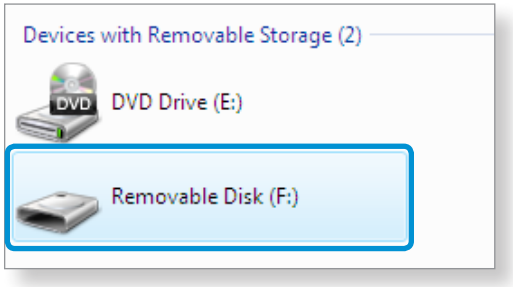
2 The card drive appears. Click **Open folder and view files**.

If the window does not appear, click **Start > Computer**.



If a window asking to scan and change appears, click **Continue Without Scanning**. This will proceed to Step 2 above.

3 You can save, move and delete data by double-clicking the corresponding drive.
You can only use the card after formatting it.



The device name of the card drive may differ depending on your computer model.

To remove a memory card

Remove the card as following depending on the model.

Push the card to eject it. Then, hold the tip of the card and pull it.

Alternatively, just hold the end of the card and remove it.

Multi Card Slot

To format a memory card

When using the memory card for the first time, you must format the card before using it.

Formatting a card deletes all data saved on the card. If the card includes data, backup the data before formatting it.

1 Click **Start** > **Computer**.

2 Right-click over a card drive with the touchpad and select **Format**.

3 Click **Start** to the formatting.

- To use a card to exchange data with a digital device such as a digital camera, formatting the data using the digital device is recommended.
- When you try to use a card, which is formatted in the computer, in another digital device, you may have to format the card again in the device.
- You cannot format, write or delete data from a SD, or SDHC card with a write protection tab when it is in the Lock position.
- Inserting and removing a memory card repeatedly may damage the memory card.

Connecting an External Display Device

If you connect an external display device such as a monitor, TV, projector, etc., you can view the picture on the wider screen of the external device when you give a presentation or watch a video or movie.

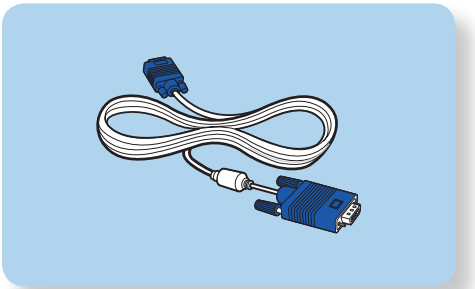
The computer provides an analog monitor port (D-SUB) and a digital video/audio port (HDMI).

The visual quality is sharper when a display device is connected through the HDMI port rather than the analog monitor port (D-SUB) port. Therefore, when multiple ports are supported, connect a display device to a port that provides the better visual quality.

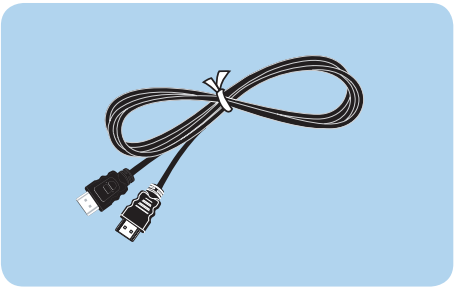
- Before you start, check the port and cable of the external display device and then connect the display device to the computer.
- Due to restrictions of the operating system the DualView function is not supported for Windows 7 Starter.

About the connection cable

Users should additionally purchase the necessary connection cables.



D-SUB Cable



HDMI Cable

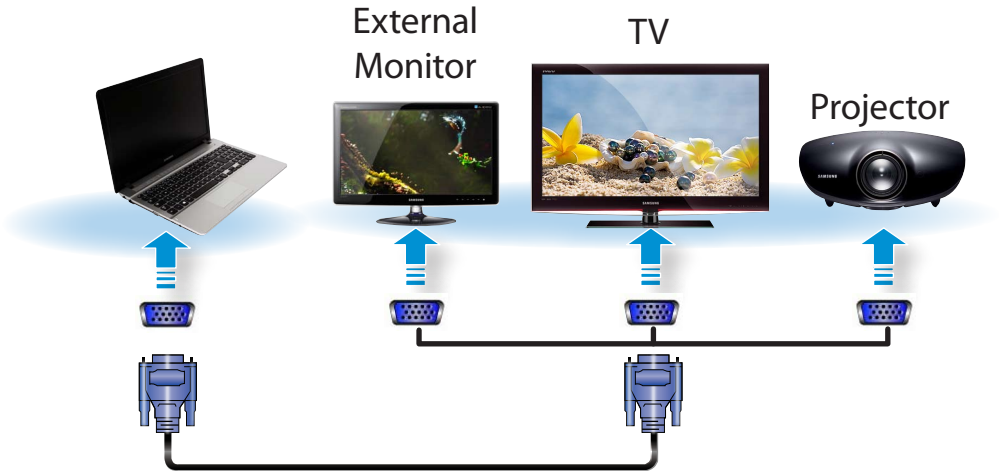
Connecting to the monitor port (Optional)

You can experience a wider screen by connecting the computer to a monitor, TV or projector with a monitor port.

You can give better presentations by connecting the computer to a projector.

1 Connect the D-SUB port of the computer and the port of the monitor or TV with the monitor cable (15 pin).

Connecting an External Display Device



2 Connect the power cord of the connected monitor, TV or projector and turn the power on.

Change your TV to external device mode when connecting to the TV.

3 Press the Fn + F4 key combination once. Then the setting screen appears where you can select the monitor mode.

Since pressing the F4 key while holding down the Fn key changes the selection, select a display device.

LCD	
CRT	
LCD+CRT Clone	
LCD+CRT Dual View	

- If the screen is not switched even if you press the Fn + F4 key combination, you have to install the **Easy Settings** program.
- **Alternatively, to set up dual view:**

  Open the **Display Settings** window in the Control Panel, select **Monitor 2** and select the **Expand to fit to this monitor** checkbox to set dual view. For more detailed information, refer to the Windows online help.

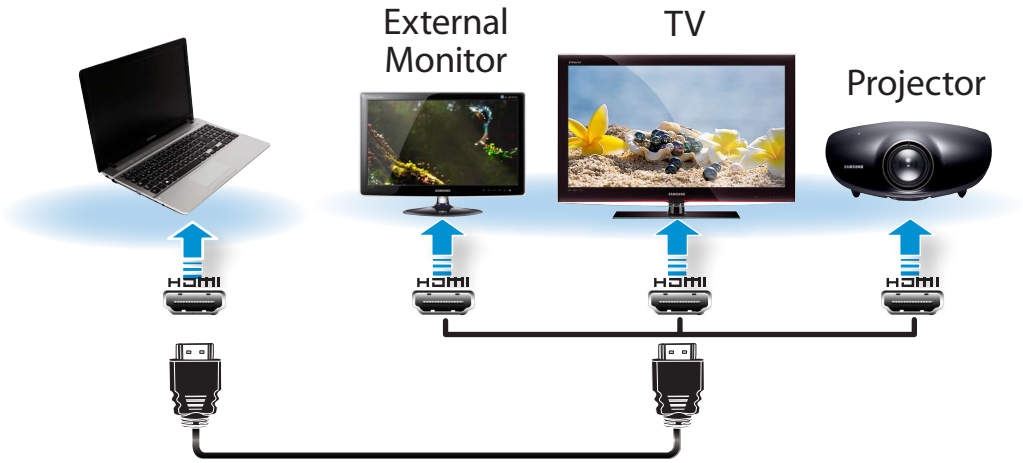
Connecting an External Display Device

Connecting through the HDMI port (Optional)

By connecting the computer to a TV with a HDMI port, you can enjoy both a high visual quality and a high sound quality.

After connecting a TV through HDMI, you have to configure the screen and sound.

1 Connect the HDMI cable to the HDMI port of the TV.



- This is only supported for models that support a TV output port (HDMI).
- When a TV provides more than one HDMI port, connect the computer to the **DVI IN** port.
- When connecting the computer to a TV, switch the external input mode of the TV to **HDMI**.

2 Press the Fn + F4 key combination once.
Then the setting screen appears where you can select the monitor mode.

Since pressing the F4 key while holding down the Fn key changes the selection, select a display device.

HDMI	
LCD+HDMI Clone	
LCD+HDMI Dual View	

- External Monitor / TV is not supported in the DOS Command Prompt window.
- Simultaneous output to all 3 (LCD + CRT + HDMI) is not supported.
- If the screen is not switched even if you press the Fn + F4 key combination, you have to install the **Easy Settings** program.

Connecting an External Display Device

Setting up HDMI TV video (Optional)

If the Desktop screen displayed on the TV does not fit to the TV screen, configure it as follows depending on the graphics card.

- You can view the graphics card type by selecting **Device Manager > Display adapters** and then clicking the + symbol.
- The screen images and terms may differ from actual product depending on the computer model and driver version.

▶ For Intel graphics cards

1 Right-click over the Desktop and select **Graphics Properties**.

If a window appears where you can select the mode, select **Basic Mode** and click **OK**.

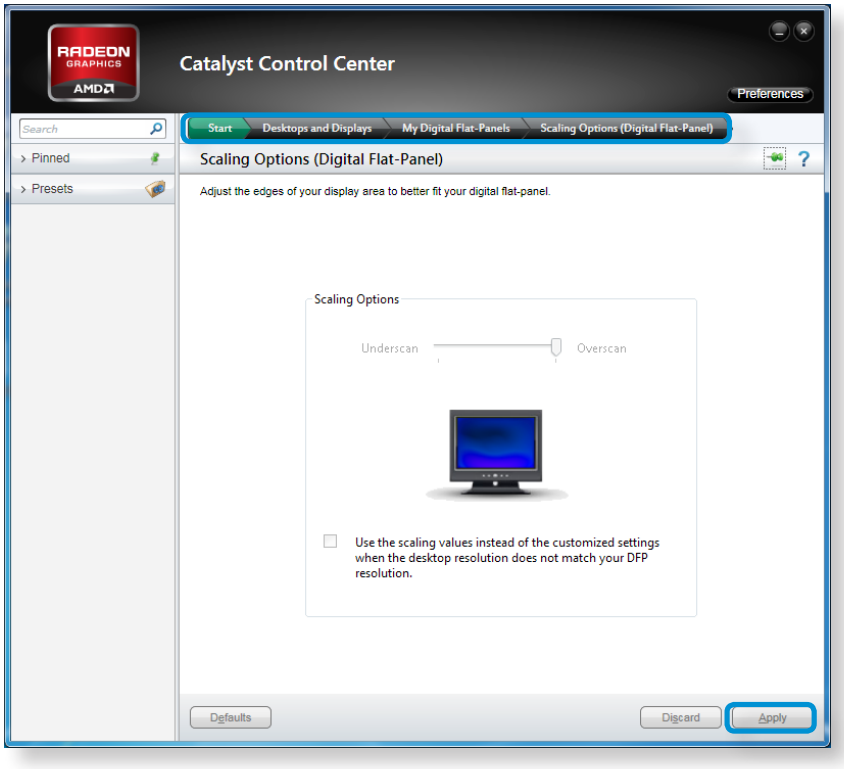
2 Click **Display > General Settings**, select **Customize Aspect Ratio** in the **Scaling** field, fit the Desktop to the TV screen and click **OK**.

Connecting an External Display Device

► For AMD graphics cards

1 Right-click on the Desktop and select **Graphics Properties > Desktops and Displays > My Digital Flat-Panels > Scaling Options (Digital Flat-Panel)**.

2 Adjust the size to the edges of the TV screen using the resize bar and click **Apply**.



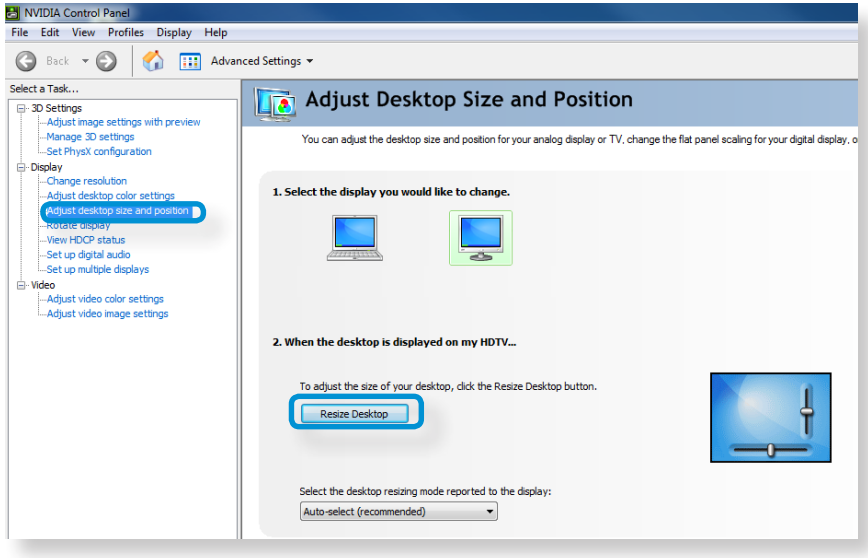
Connecting an External Display Device

► For NVIDIA graphics cards

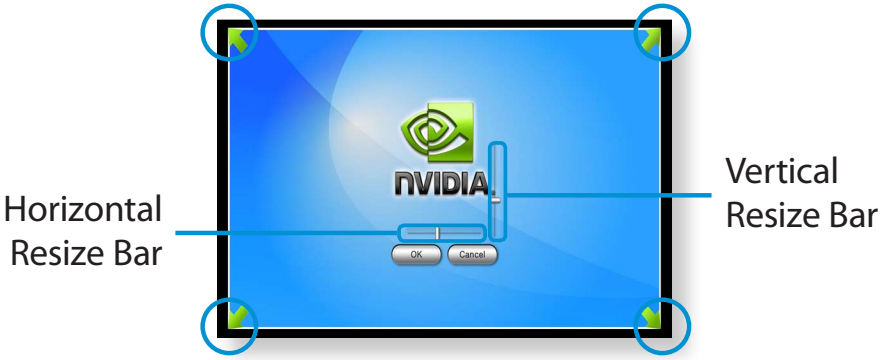
This function is not provided in the Optimus specifications.

1 Right-click over the Desktop and select **NVIDIA Control Panel**.

2 In the **Select a Task** window in the left panel, select the **Dispaly > Adjust Desktop Size and Positon** item and then click **Resize Desktop**.


NVIDIA Control Panel
File Edit View Profiles Display Help
Back
Advanced Settings
Select a Task...
3D Settings
Adjust image settings with preview
Manage 3D settings
Set PhysX configuration
Display
Change resolution
Adjust desktop color settings
Adjust desktop size and position
View HDCP status
Set up digital audio
Set up multiple displays
Video
Adjust video color settings
Adjust video image settings
Adjust Desktop Size and Position
You can adjust the desktop size and position for your analog display or TV, change the flat panel scaling for your digital display, o
1. Select the display you would like to change.
2. When the desktop is displayed on my HDTV...
To adjust the size of your desktop, click the Resize Desktop button.
Resize Desktop
Select the desktop resizing mode reported to the display:
Auto-select (recommended)

3 Resize the Desktop using the resize bars so that the four arrows at the corners of the Desktop are placed in the corners of the TV and then click **OK**.



Connecting an External Display Device

Setting up HDMI TV audio (Optional)

You can configure the sound of the computer to be played through the HDMI TV.

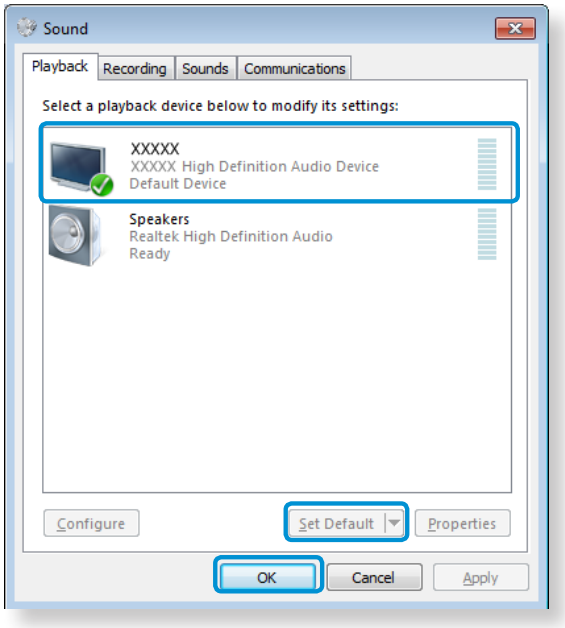
You have to configure the sound device in the Control Panel whenever you connect the HDMI TV in order to hear sound from the computer on the TV.

The screen images and terms may differ from actual product depending on the computer model.

1 Right-click over the **Volume** Control icon in the notification area at the bottom right of the Desktop and select **Playback Devices**.

(Alternatively, click the **Control Panel > Hardware and Sound > Sound**.)

2 Change the setting to Digital Audio (HDMI), HDMI Device or Digital Output Device, click **Set Default** and click **OK**.



HDMI Output Device may not appear on the playback device list depending on the computer model.

In this case, turn on the TV, connect the TV to the computer using a HDMI cable and then switch to HDMI or LCD+HDMI Clone or LCD+HDMI DualView mode using the Shortcut Key(Fn + F4).

To listen to sound on the computer after disconnecting the HDMI TV, you have to set the Playback Device to Speakers.

Connecting an External Display Device

Using AMD Graphics Effectively (optional)

PowerXpress is Switchable Graphics technology that selectively enables either the internal or external graphics chipset depending on the program to extend the battery life time while maintaining the graphics performance.

This technology uses the internal graphics by default to reduce battery consumption and switches to the external graphics when the user uses some program functions that require a high graphics performance such as games and playing videos.

- This description is only for Windows 7/8 and models with AMD PowerXpress technology.

► Adding programs for PowerXpress graphics technology

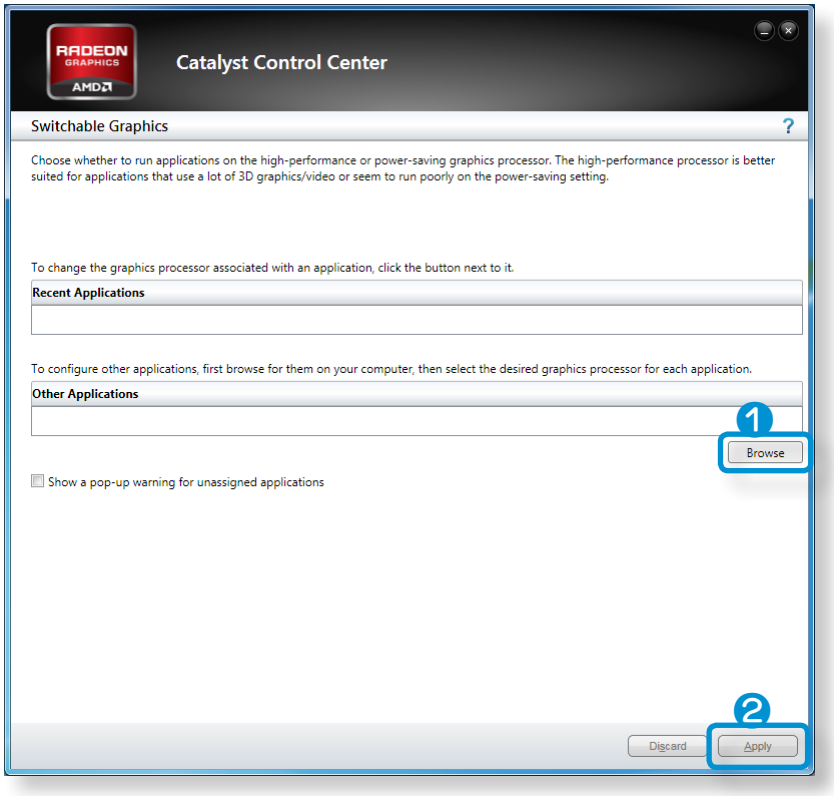
You have to register the program to run some functions of a program using the external graphics chipset.

Some programs are pre-registered. To register more programs, complete the following steps.

- Unregistered programs will run using the internal graphics chipset.
- You can register executable files (EXE) only.

1 Right-click on the Desktop and select **Configure Switchable Graphics** from the popup menu.

2 Click the **Browse** button and register the software and click the **Apply** button.


RADEON GRAPHICS
AMD
Catalyst Control Center
Switchable Graphics
Choose whether to run applications on the high-performance or power-saving graphics processor. The high-performance processor is better suited for applications that use a lot of 3D graphics/video or seem to run poorly on the power-saving setting.
To change the graphics processor associated with an application, click the button next to it.
Recent Applications
To configure other applications, first browse for them on your computer, then select the desired graphics processor for each application.
Other Applications
1
Browse
Show a pop-up warning for unassigned applications
2
Discard
Apply

3 From now on some of the functions of the registered program that require a high graphics performance will run with the external graphics chipset without additional configuration.

Connecting an External Display Device

Using NVIDIA graphics more efficiently (optional)

NVIDIA Optimus is a function that enables automatic selection and usage of the internal or external graphics chipsets depending on the currently running software.

For example, the internal graphics chipset can be used for Internet surfing or word processing to minimize battery power consumption and the high-performance external graphics graphic chipset can be used for gaming or video processing to deliver a more realistic experience.

- The NVIDIA Optimus model supports Windows 7/8 only.
- This function is only available in models that support the NVIDIA Optimus technology.

Registering programs to be executed by the external graphics chipset

To run a program using the external graphics graphic chipset, you have to register the program in the NVIDIA Panel.

Some programs are pre-registered. To register more programs (e.g. 3D games, etc.), complete the following steps.

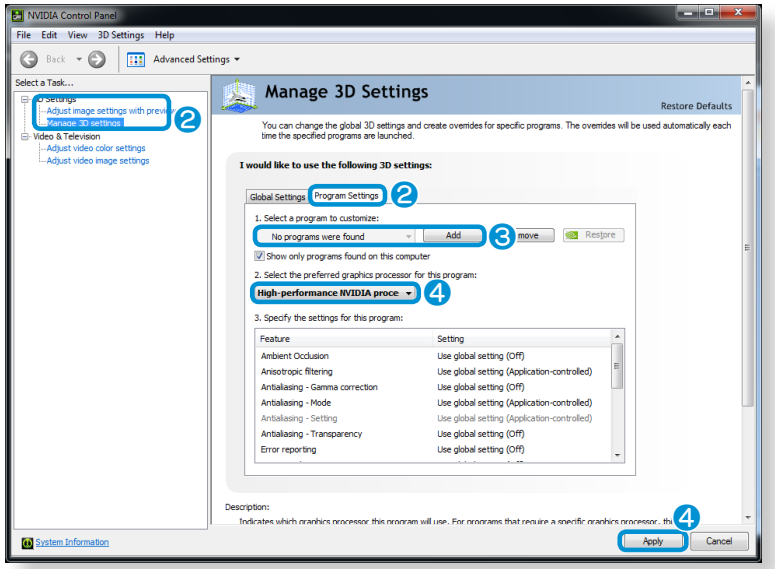
1 Right-click over the Desktop and select **NVIDIA Panel**.

2 Select **3D Settings > Manage 3D settings** in the left pane and select the **Program Settings** tab.

3 In the **Select a program to customize(S)** field, click the **Add** button to register the software.

You can register executable files (EXE) only.

4 In the **Select the preferred graphics processor for this program (O)** field, select **High-performance NVIDIA processor** and click the **Apply** button.



5 The program has been registered.

When you run the registered program, the program is executed using the external graphics chipset without requiring additional configuration.

Connecting an External Digital Device

You can save a file stored on a device onto the computer by connecting a digital device such as a camera, camcorder or mobile phone to the computer and using the file management functions.

Connecting and using a camera or camcorder

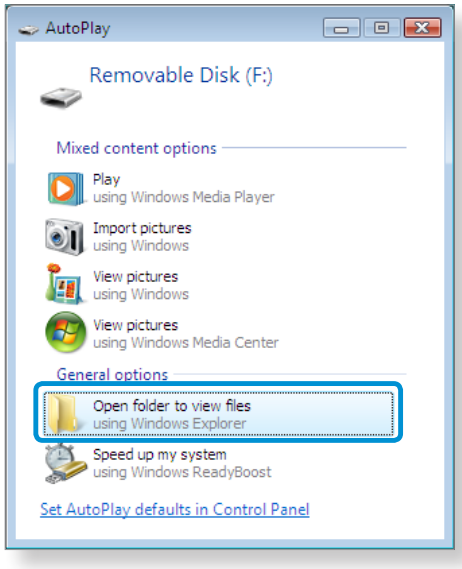
If a digital device such as a camera or camcorder is connected with the computer, it is recognized as a removable disk so that you can copy or move the files on the device.

1 Connect the USB port of the notebook computer and the USB port of the digital device such as a camera using the USB cable.

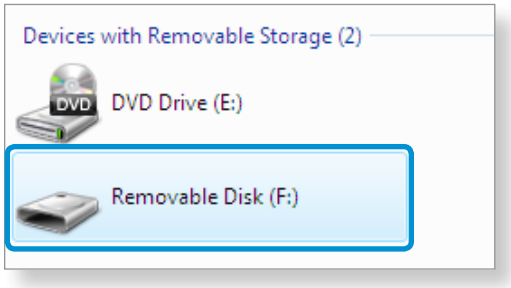
- Both the computer and the digital device must be turned on.
- You have to additionally purchase the USB cable necessary to connect the computer and the device.

2 The **Auto run** window appears. Click **Open folder and view files**.

If the window does not appear, click **Start** > **Computer**.



3 Double-click the corresponding drive. You can then save, move or delete data.



The device name of the card drive may differ depending on the model.

Adjusting the Volume

You can adjust the volume using the keyboard and the volume control program.

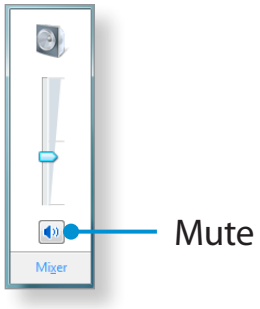
Adjusting the Volume using the Keyboard

Fn + F7 or Fn + F8

Alternatively, press the Fn + F6 key combination to turn the volume on or off.

Adjusting the Volume using the Volume Adjustment Program

Click the Volume icon on the taskbar and slide the volume control bar to adjust the volume.



Using the Sound Recorder

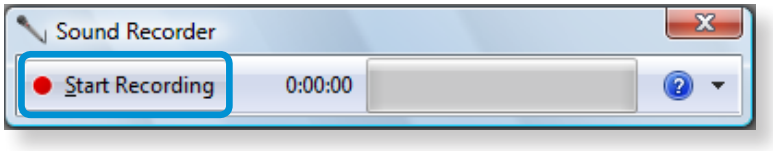
The procedures to record sound using the Windows Recorder are described below.

1. Connect a microphone to the microphone jack.
   You can also use the internal MIC.

2. Right-click over the **Volume** icon on the taskbar and select **Recording Device**.

3. Check if the microphone is set as the default recording device.
   If this is the case, it is already set as the default device. If not, right-click over the microphone and select **Set default**.

4. Click **Start > All Programs > Accessories > Sound Recorder** and click **Start recording** to start a recording.



Adjusting the Volume

Using SoundAlive (Optional)

The SoundAlive function enables you to experience more stereophonic sound using stereo speakers.

- SoundAlive is only supported in Windows 7.
- The software programs provider may vary, depending on your computer model.
- In addition, some pictures may differ from actual product depending on the computer model and software version.

1 Right-click over the **Volume Control** icon in the notification area at the bottom right of the Desktop and select **Playback Devices**. (Alternatively, click the **Control Panel > Hardware and Sound > Sound**.)

2 Right-click over the **Speakers** and select **Properties**.

3 Select the **SoundAlive** tab and select one of the modes.

► Basic Mode

Music	Select this mode to listen to music.
Movie	Select this mode to watch a movie.
Speech	Emphasizes voice over other sounds.
Silver	Silver mode is for people who have difficulty in hearing.
3D Depth Sound Mode	Select this mode to play a 3D movie or game.

► Advanced Mode

Finely tuned 25 presets are arranged on a square according to their relative sound characteristics.

► User Mode

You can control a variety of sound effects.

Wired Network

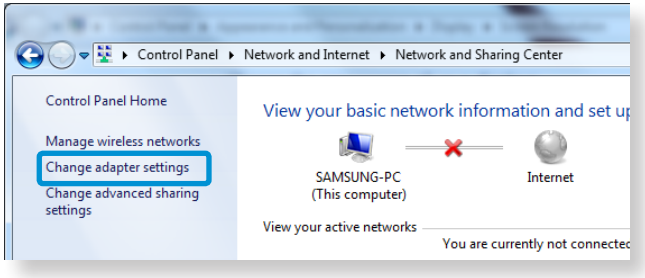
A wired network is a network environment used for a company network or broadband internet connection at home.

- You can use wired LAN by using the LAN adapter (Optional).
- The figures used for the description are of a representative model. Therefore the figures may differ from the real ones.

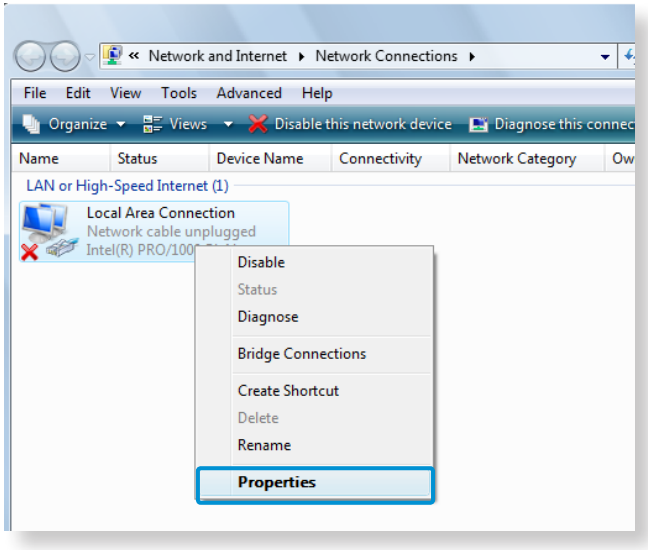
Connecting to a Wired LAN through Windows

1 Connect a LAN cable to the computer's LAN port.

2 Click **Start > Control Panel > Network and Internet > Network and Sharing Center** and click on **Change adapter settings** in the left menu pane.

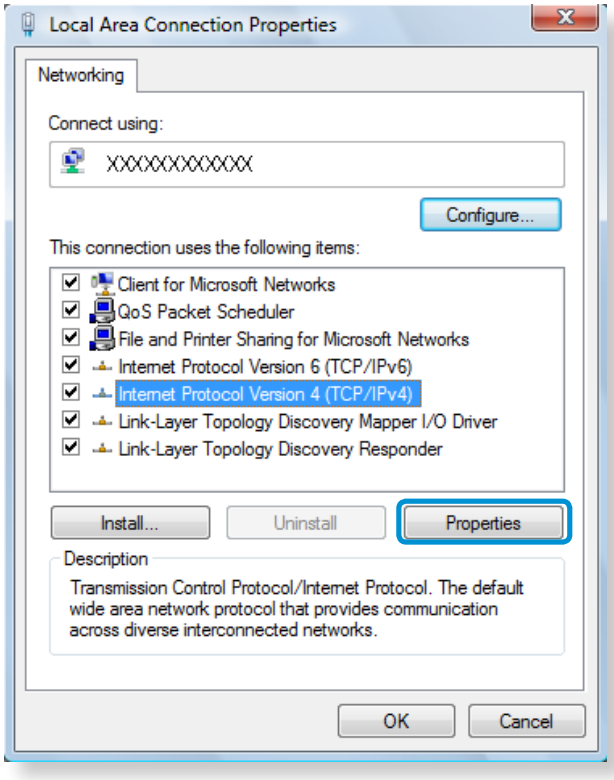

Control Panel ▸ Network and Internet ▸ Network and Sharing Center
Control Panel Home
Manage wireless networks
Change adapter settings
Change advanced sharing settings
View your basic network information and set up
SAMSUNG-PC
(This computer)
Internet
View your active networks
You are currently not connected

3 Select **Local Area Connection** and click the right button of the touch pad and select **Properties**.



The LAN Device name may differ depending on your computer's Network Device.

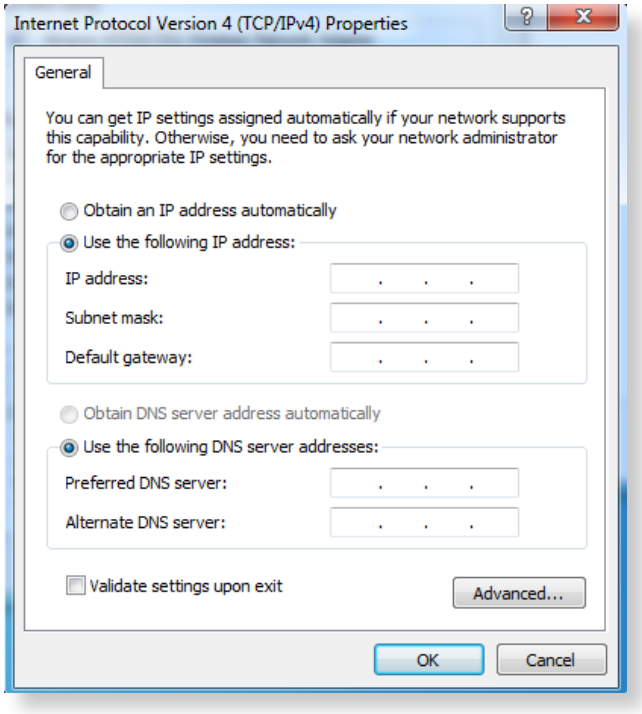
4 Select **Internet Protocol Version 4(TCP/IPv4)** from the list of Network Components and click **Properties**.



- The Network Component name may differ depending on the Operating System Installed.
- To add a network component, click **Install** in the screen shown in the figure above. You can add clients, services, and protocols.

5 Configure the IP settings.

When using DHCP, select **Obtain an IP address automatically**. To use a static IP address, select **Use the following IP address**, and set the IP address manually.


Internet Protocol Version 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

When not using DHCP, ask your network administrator for the IP address.

6 When you have completed the settings, click the **OK** button.

The network settings have been completed.

Using the <Wake On LAN> Function

<Wake On LAN> is a function that activates the system from Sleep mode when a signal (such as a ping or magic packet command) arrives over the network (wired LAN).

1 Click **Start > Control Panel > Network and Internet > Network and Sharing Center** and click on **Change adapter settings** in the left menu pane.

2 Right-click on the Local Area Connection and select **Properties**.

3 Click **Configure > Power Management** tab. Select **Allow this device to bring the computer out of standby**, then click **OK**. Restart the system.

- If the system wake up from Sleep mode even though there is no received signal, use the system after disabling the <Wake On LAN> function.
- The LAN LED may not be turned off if System is shutdown without disabling the WOL <Wake on LAN> option.
- Connecting a wired LAN while using a wireless LAN may not activate the <Wake On LAN> function. Set the Wireless LAN to **Disable** to use the <Wake On LAN> function.
- <Wake On LAN> feature may not work while using Hybrid power saving feature.

For **Windows 7**, **Wake On LAN** is not supported **Ping**.

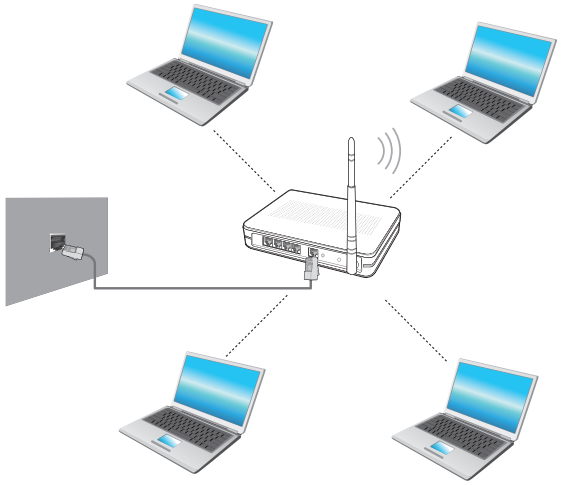
When connected to a 100Mbps/1Gbps wired LAN and the computer exits Sleep/hibernation mode, a message appears informing you of a connection to a 10Mbps/100Mbps wired LAN. This happens because when the computer exits standby/hibernate mode, restoring the network takes about 3 seconds. When the network is restored, it operates at 100Mbps/1Gbps.

When system is running on battery, some time it takes about 20sec after inserting LAN cable to be able to connect to internet. This symptom happen as a result of power saving feature to reduce battery consumption.

When system is running on battery, the Wired LAN speed is decreased automatically to reduce battery consumption. In such case, a 1Gbps /100Mbps LAN would function at 100Mbps/10Mbps speed.

Wireless Network (Optional)

A wireless network (Wireless LAN) environment is a network environment that enables communicating between multiple computers at home or a small-size office through wireless LAN devices.



- The screen figures and terms may differ depending on the model.
- Depending on the program version, some functions may not be provided or different functions may be provided.
- The descriptions below are for computer models with a Wireless LAN card or device. A Wireless LAN device is optional.
  The pictures in this manual may differ from the actual product depending on your wireless LAN device model.
- If the wireless LAN is turned off, press the Fn + F12 key combination to turn it **on**.

What is an Access Point (AP)?

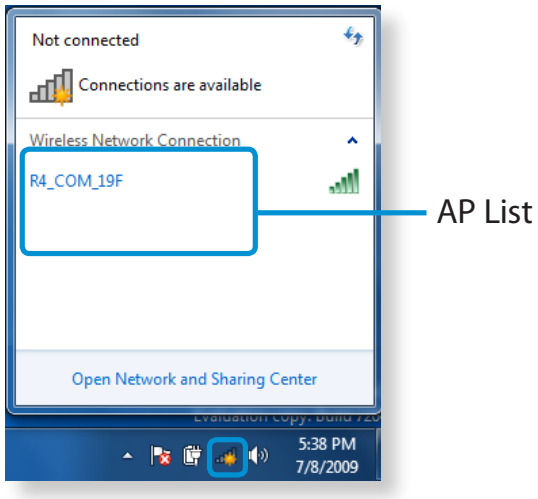
An AP is a network device that bridges wired and wireless LANs, and corresponds to a wireless hub in a wired network. You can connect multiple wireless LAN installed computers to an AP.

Wireless Network (Optional)

Connecting to a Wireless LAN through Windows

If there is an AP, you can connect to the Internet via the AP using the Wireless LAN connection method provided by Windows.

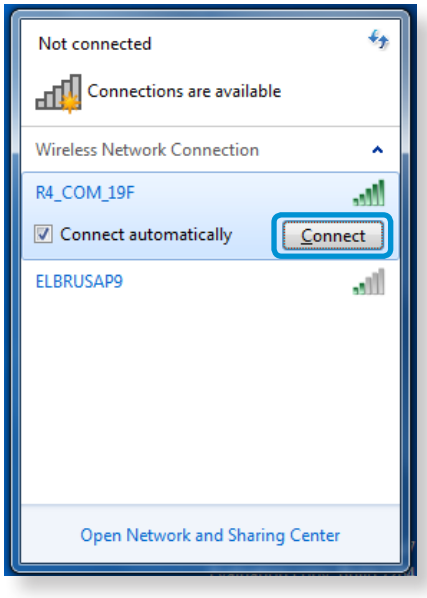
1 If you click the **Network Connections** icon in the system tray, a list of available APs appears. If you select an AP to connect to, the **Connect** button appears.



2 Click **Connect**.

If a network key is set for the AP, enter the network key and then click **Connect**.

For the network key, please ask your network administrator.



3 When **Connected** to the AP is displayed, click the **Close** button.

You can access the network.

Wireless Network (Optional)

Normal Wireless LAN Status

If the wireless LAN icon is displayed in the system tray of the Taskbar, it indicates that the computer is connected to the Internet properly (see below).

Abnormal Wireless LAN Status

When the wireless LAN is not connected

If the wireless LAN icon is displayed with an "X" in the system tray of the Taskbar, it indicates that the wireless LAN device is turned off or that there are no available APs. Or the wireless LAN is disconnected.

If the wireless LAN is turned off, press the Fn + F12 key combination to turn it on.

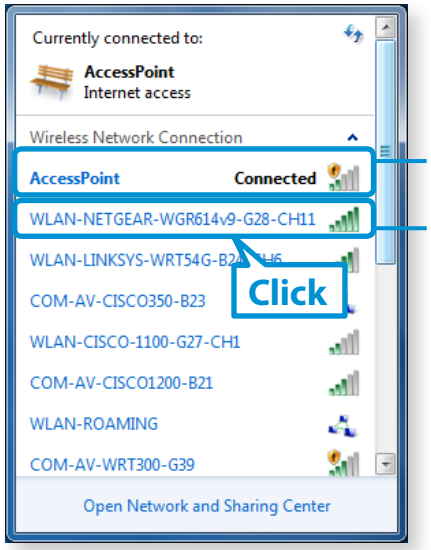
When you are not connected to the Internet

This is indicated by the wireless LAN icon ⚠ in the system tray of the Taskbar. In this case, you have to check the IP address settings.

Please contact your network administrator and reconfigure the IP address.

When APs are found but your computer is not connected to the Internet

This is the case when an AP with a weak signal has been set to a high priority. Connect to an AP with a strong signal by clicking it.



The currently connected AP.
The signal strength is low.

An AP with a strong signal strength

Using the TPM Security Device (Optional)

A TPM (Trusted Platform Module) security device is a security solution that protects your personal information by saving the user authentication data on the TPM chip installed on the computer.

To use the TPM security device, you have to initialize the TPM chip in the BIOS Setup, initialize the TPM program, and then register the user.

- This function is only supported for models with TPM (security chip).
- For more information, refer to the online help for the program.
- The program version described in this manual is subject to change and the screenshots and terms used in this manual may differ from the actual product.

Setting Up the TPM

To use the TPM function, you have to complete the following steps.

1 **Initializing the TPM chip**
Initializes the authentication information saved on the TPM chip.

2 **Installing the TPM program**
Installs the TPM program.

3 **Registering the TPM program**
Registers the TPM program.

If you complete the steps above, you can use the TPM function.

Using the TPM Security Device (Optional)

Initializing the TPM chip

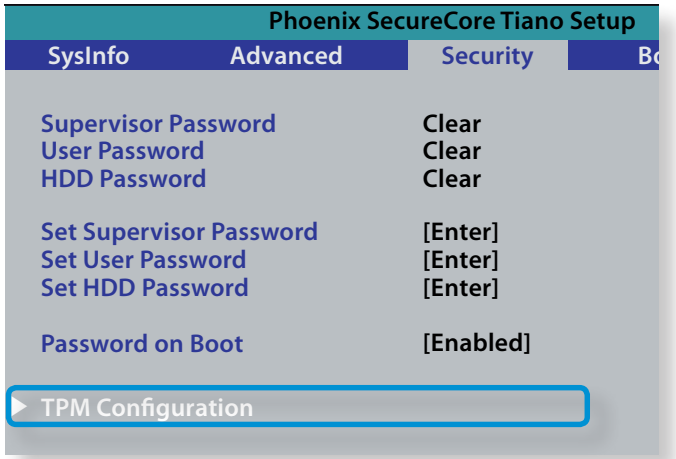
When you use the TPM function for the first time or you want to register the user again, you have to initialize the TPM chip.

- Initializing the TPM chip erases all authentication information saved on the TPM chip. Any decision to initialize must be taken carefully.
- To initialize the TPM chip again while the TPM function is in use, you have to decrypt any existing files and folders encrypted by the TPM function first. Otherwise, you will not be able to access the files and folders after re-initialization.

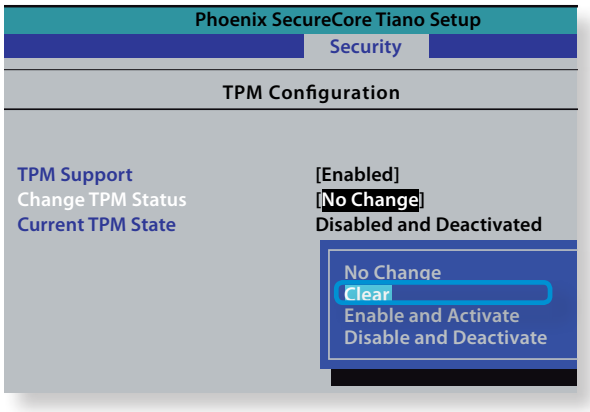
1 Restart the computer.

When the Samsung logo screen appears, press the **F2** key repeatedly.

2 If the BIOS screen appears, select the **Security** > **TPM Configuration** item and press **Enter**.



3 Set the **TPM Support** item to **Enabled** and set the **Change TPM Status** to **Clear**.



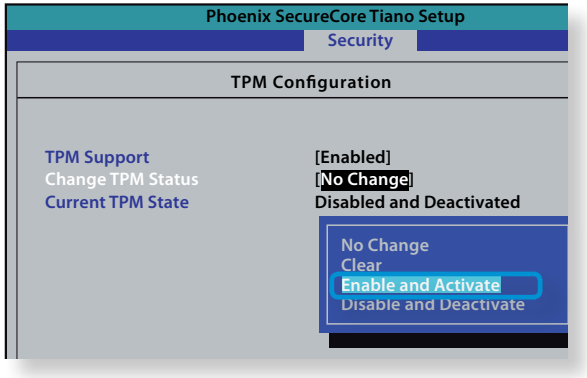
4 Press the **F10** key to save the changes.

Using the TPM Security Device (Optional)

5 When the system reboots, press the corresponding key(s) by following the onscreen instructions.

6 When the computer restarts automatically and the Samsung logo screen appears, press the **F2** key repeatedly.

7 Select the **Security > TPM Configuration > Change TPM Status** item and set the item to **Enable and Activate**.



8 Press the **F10** key to save the changes.

9 When the system reboots, press the corresponding key(s) by following the onscreen instructions.

10 Press the **F10** key to save the changes. The computer automatically restarts. Initialization of the TPM chip has been completed. Now, install the TPM program and register the TPM program.

Installing the TPM program

You can install the TPM program as follows. Install the program according to the procedures below.

This program is only provided for models with Samsung Recovery Solution and the TPM function.

1 Launch the **Samsung Recovery Solution**.

2 Click the **System Software** icon.

3 Click the **System Software Installation** icon.

4 The **Easy Software Manager** program will be launched. Select **TPM Host SW** and click **Install Now**.

If the system software media is supplied with the product, you can install the program by using the system software media (only when supplied.)

5 After the installation, if you click **OK**, the computer restarts.

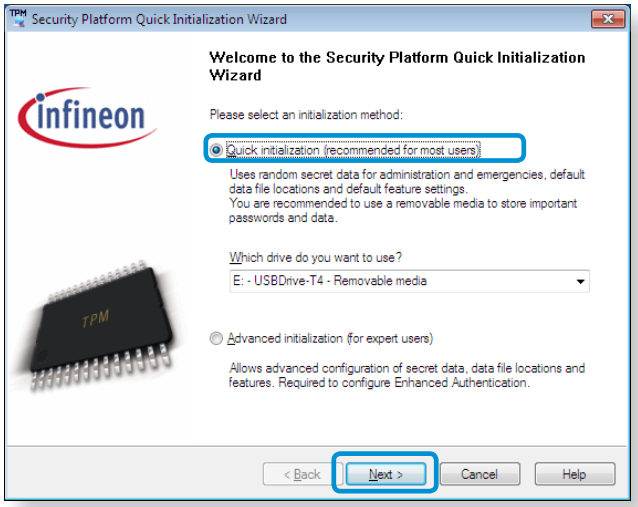
Using the TPM Security Device (Optional)

Registering the TPM program

1 Click **Start > All Programs > Infineon Security Platform Solution > Manage Security Platform > User Settings**. (with administrator authority)

Alternatively, double-click the icon on the Taskbar and run initialization with administrator authority.

2 The security authentication settings begin with the **Initialization Wizard**. When the Initialization Wizard appears, click **Next**.


Security Platform Quick Initialization Wizard
Welcome to the Security Platform Quick Initialization Wizard
Please select an initialization method:
Quick initialization (recommended for most users)
Uses random secret data for administration and emergencies, default data file locations and default feature settings.
You are recommended to use a removable media to store important passwords and data.
Which drive do you want to use?
E: - USBDrive-T4 - Removable media
Advanced initialization (for expert users)
Allows advanced configuration of secret data, data file locations and features. Required to configure Enhanced Authentication.
< Back
Next >
Cancel
Help

If the **status not initialized** message appears, click **Yes**.

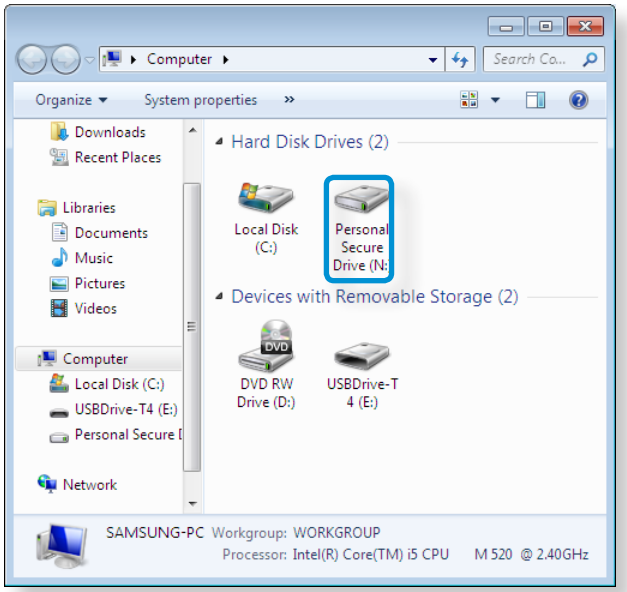
If you backup the emergency recovery file to an external storage device according to the instructions of the Initialization Wizard, you can use the TPM security device more safely.

3 Select a **Security Platform Feature** and set a **basic user password**.

4 Complete the registration according to the instructions.

5 The user registration for the TPM program has been completed. You can encrypt files and folders by using the encryption file system, and use files and folders to be encrypted by creating or copying them to the virtual drive.

The virtual drive is created in the following location.



Using the TPM Security Device (Optional)

Using the TPM program

For more information about using the TPM program, refer to the online help for the program.

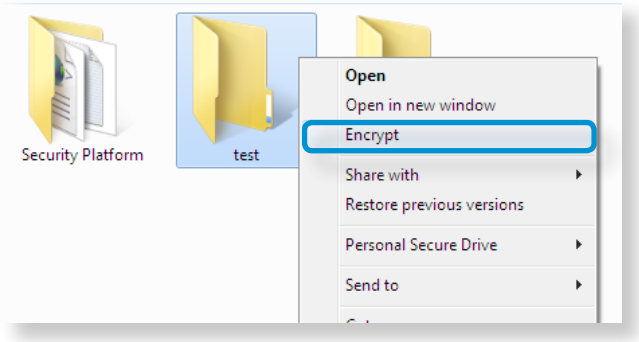
Encrypting a file (folder)

This function enables encrypting files and folders. You can safely protect documents through the Encrypt File System (EFS).

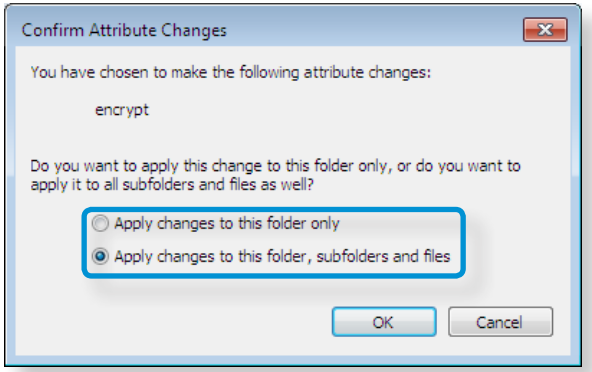
The Encrypt File System(EFS) function is supported by the following operating systems.

- Windows XP Professional
- Windows Vista Business / Enterprise / Ultimate
- Windows 7 Professional / Enterprise / Ultimate

1 Right-click over the folder (or file) to be encrypted, and select **Encrypt** from the pop-up menu.



2 If the **Confirm Attribute Changes window** appears, select the range to apply the encryption to and click **OK**.
(This dialog box only appears when the folder is encrypted.)


Confirm Attribute Changes
You have chosen to make the following attribute changes:
encrypt
Do you want to apply this change to this folder only, or do you want to apply it to all subfolders and files as well?
Apply changes to this folder only
Apply changes to this folder, subfolders and files
OK
Cancel

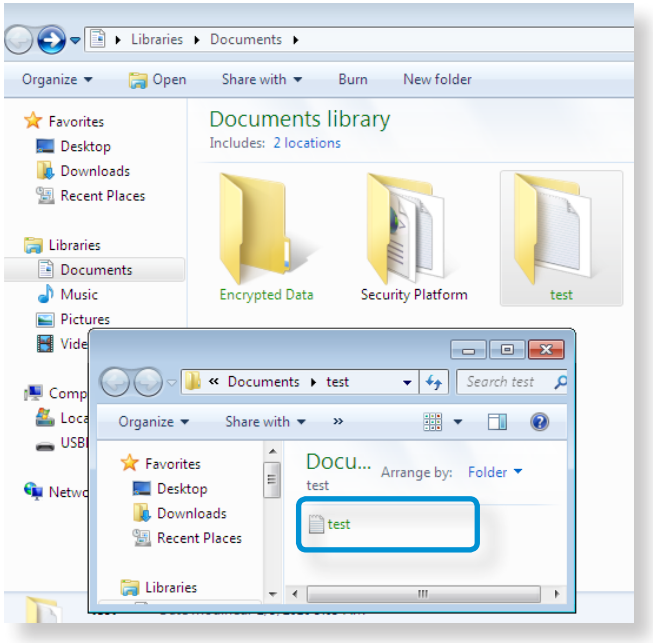
If the current operating system is Windows 7 or Vista, the user account control window appears. In this case, click **Continue**.

3 In the **user authentication** window, enter the **Basic user password** you entered when registering the user and click **OK**.

Infineon Security Platform User Authentication
Copyright © Infineon Technologies AG
An application needs access to a protected key.
Basic User Password:
Remember password for all applications
OK
Cancel
Help
This dialog will automatically be canceled in 22 seconds.

Using the TPM Security Device (Optional)

4 You will be able to confirm that the color of the folder (file) name in the encrypted folder has been changed to green.



Opening an encrypted folder (file)

1 Double-click an encrypted folder (file).

2 If the user authentication window appears, enter the **basic user password** you entered when registering the user and click **OK**.

3 The folder (file) opens.

Decrypting an encrypted folder (file)

1 Right-click over an encrypted folder (file) and select **Decrypt** from the pop-up window.

2 If the user authentication window appears, enter the **basic user password** you entered when registering the user and click **OK**.

3 The folder (file) is decrypted.

Using the virtual drive (Personal Secure Drive: PSD)

The virtual drive (PSD) is a virtual space to save and manage confidential data. In the created virtual drive (PSD), you can create files and folders as with a normal drive (e.g. drive C:) and you can use confidential data saved on another drive by copying the data to the virtual drive (PSD).

Using the TPM Security Device (Optional)

When the virtual drive (PSD) does not appear

You can only use the virtual drive (PSD) when you have selected the Personal Secure Drive (PSD) option during the program registration.

If you have not selected the option during the registration, complete the following steps.

1 Click **start > All Programs > Infineon Security Platform Solution > Manage Security Platform** and click the **User Settings** tab > **Security Platform Features** and then **Configure**.

2 When the **Initialization Wizard** appears, select **Personal Secure Drive (PSD)** and enter the user password.

3 Click **Next** several times according to the instructions of the **Initialization Wizard** to finish the wizard.

When the virtual drive (PSD) is not loaded

To use the virtual drive (PSD), the virtual drive (PSD) should be loaded first. If it is not loaded, you can load it according to the procedures below.

1 Right-click over the **Security Platform** icon in the system tray of the Taskbar and select **Personal Secure Drive > Load** from the pop-up menu.

2 In the load window, enter the basic user password and click **OK**.

3 If you click **Start > Computer**, you will be able to confirm that the Personal Secure Drive is created.

Note that when you have copied confidential data to the PSD, the original data files are not encrypted.

When you have to register again (to erase the authentication information on the TPM chip)

To register a user again, you need to delete the existing authentication information saved on the TPM chip and then clear the TPM chip.

Register the user in the following order.

1 Delete the virtual drive.

2 Delete the existing authentication information saved on the TPM chip.

Using the TPM Security Device (Optional)

Deleting the virtual drive

If a virtual drive has been created, you have to delete the virtual drive before deleting the existing authentication information saved on the TPM chip.

1. Right-click over > and click **Personal Secure Drive > Create/Manage**.
2. Click **Next**.
3. Enter the password that you entered when registering the TPM program and click **Next**.
4. Select Delete selected PSD and click **Next**.
5. Select "**I want to permanently delete my Personal Secure Drive without saving an unencrypted copy of its contents.**" and click **Next**.
6. Click **Next** and then **Finish**.
7. Now the virtual drive has been deleted.

Deleting the existing authentication information saved on the TPM chip.

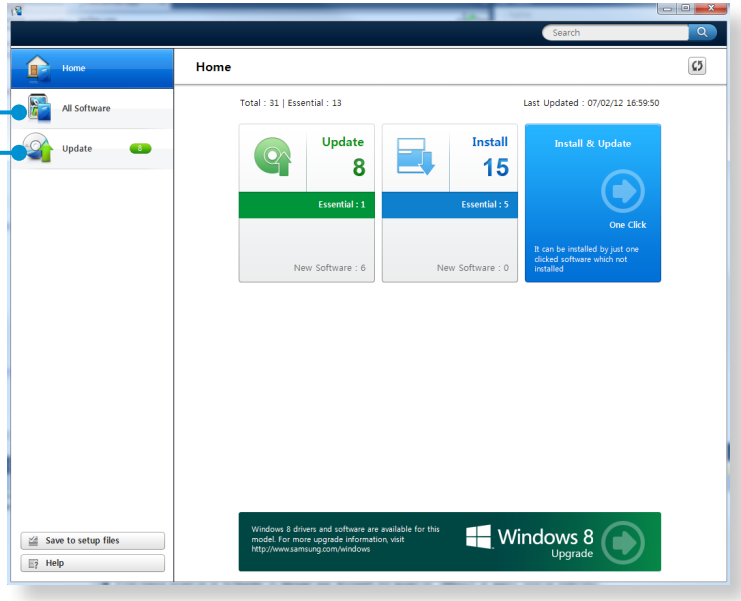
1. Click the **Start > Control Panel > Programs > Uninstall Program > Infineon TPM Professional Package** and click **Uninstall**.
2. If the message window appears, click **Yes** to remove the program.
3. If the **Infineon Security Platform** message appears, click **No**.
4. Click the **Start > Computer > Organize > Folder and Search Options > View > Hidden files and folders** item, select **Show hidden files and folders** and click **OK**.
5. Click the **Start > Computer > Drive C: > ProgramData** folder and delete the **Infineon** folder.
6. Now the TPM Program has been deleted.

   To use the TPM function, please repeat the procedures of the **TPM chip initialization** process.

Samsung Software Update

SW Update is a software program that searches for Samsung software programs and drivers installed when you purchased the computer and helps you update any drivers or programs.

- You can check updatable files before performing the update only when you are connected to the internet.
- SW Update does not provide any updates for device drivers or software programs installed separately by the user.



1 Click **Start** > **All Programs** > **Samsung** > **SW Update**.

2 If the program is running for the first time, the User Agreement for personal information use appears.
Click **Agree**.

3 The **SW Update** program runs.
Select the items that you want to update before proceeding with the update process.

Using the Security Slot

You can secure the computer by connecting a lock and cable to the Security Slot.

To use this feature, you have to purchase the lock and cable additionally. To use the lock and cable, refer to the product manual.

Tie the lock and cable to a fixed object and install the other end of the cable to the security slot.

Chapter 3. Settings and Upgrade

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Battery 82

LCD Brightness Control

You can adjust the LCD brightness in 8 levels.

The screen brightness is automatically set to the brightest level when AC power is connected and the brightness is automatically set dimmer when the computer runs on battery power to extend the battery use time.

Controlling the Brightness Using the Keyboard

Adjust the LCD brightness by pressing the Fn + F3 key or the Fn + F2 key.

The LCD brightness can change up to 8 levels and the brightness increases by 1 level when pressing the Fn + F3 key once.

- **Maintaining the changed LCD brightness even after turning the computer on again**

  To maintain the LCD brightness set by using the brightness control keys or through the Power Options, follow the procedures below.

  1. Click **Control Panel > Hardware and Sound > Power Options**.
  2. Click **Change the settings** of the currently configured mode.
  3. Adjust the display brightness adjustment menu bar and click the **Save the changes** button.

- **Saving battery power consumption**

  Decreases the LCD brightness when the computer is running on battery power to save battery power consumption.

- **LCD bad pixels principle of computer**

  Samsung observes the specifications regarding strict quality and reliability of LCD. But in spite of that, it is inevitable that there might be a small number of bad pixels. A large number of bad pixels can cause problems in appearance, but a small number of pixels doesn't affect the computer performance.

  Therefore Samsung observes and manages the following dot principles:

  - Bright dot : 2 or less
  - Black dot : 4 or less
  - Combination of Bright and Dark : 4 or less

Instructions for Cleaning the LCD

Clean the LCD panel with a soft cloth lightly moistened with computer cleansing detergent moving in one direction.

Cleaning the LCD panel with excessive force can damage the LCD.

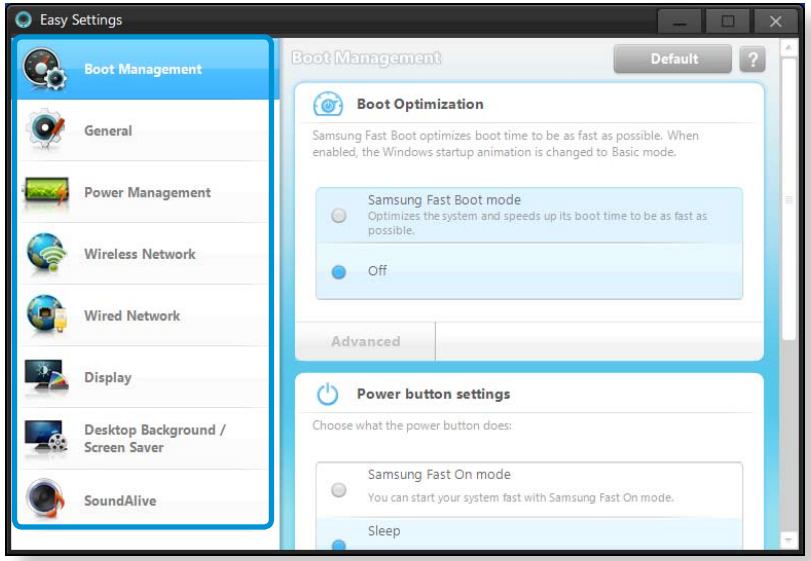
Easy Settings (Optional)

The **Easy Settings** is the integrated Samsung software control program that allows users to configure various settings.

- This description is for models that support this function running on Windows 7.
- The screen image and terminology may change depending on the model.
- Depending on the program version, some functions may not be provided or different functions may be provided.

1 Press the Fn + F1 key combination to launch the **Easy Settings**.

2 Select an item to configure the corresponding function.


Easy Settings
Boot Management
General
Power Management
Wireless Network
Wired Network
Display
Desktop Background / Screen Saver
SoundAlive
Boot Management
Default
Boot Optimization
Samsung Fast Boot optimizes boot time to be as fast as possible. When enabled, the Windows startup animation is changed to Basic mode.
Samsung Fast Boot mode
Optimizes the system and speeds up its boot time to be as fast as possible.
Off
Advanced
Power button settings
Choose what the power button does:
Samsung Fast On mode
You can start your system fast with Samsung Fast On mode.
Sleep

Functions

Boot Management (Optional)	You can configure Boot Optimization , Power Button settings , Lid Open Action.
General	You can configure USB Charging, Silent Mode, Keyboard backlit, User Account Control.
Power Management	You can configure Power Plan (high-performance, power-saving, Samsung optimal mode), Eco Mode, the power-saving settings and the display settings.
Wireless Network	You can configure whether to use the Bluetooth and Wi-Fi options.
Wired Network	You can select automatic or fixed IP settings.
Display	You can configure external display devices, and the screen brightness/color.
Desktop Background / Screen Saver	You can configure the Desktop background and the screen saver.
SoundAlive	You can configure the sound mode (Music, Classic, Concert Hall, Movie, 3D Depth Sound Mode, Advanced, etc.).

BIOS Setup

The BIOS Setup enables you to configure your computer hardware according to your needs.

- Use the BIOS setup to define a boot password, change the booting priority, or add a new device.
- Since incorrect settings may cause your system to malfunction or crash, take care when configuring the BIOS.
- The functions of the BIOS setup are subject to change for product function enhancement purposes.
- The BIOS Setup menus and items may differ depending on your computer model.

Entering the BIOS Setup

1 Turn the computer on.

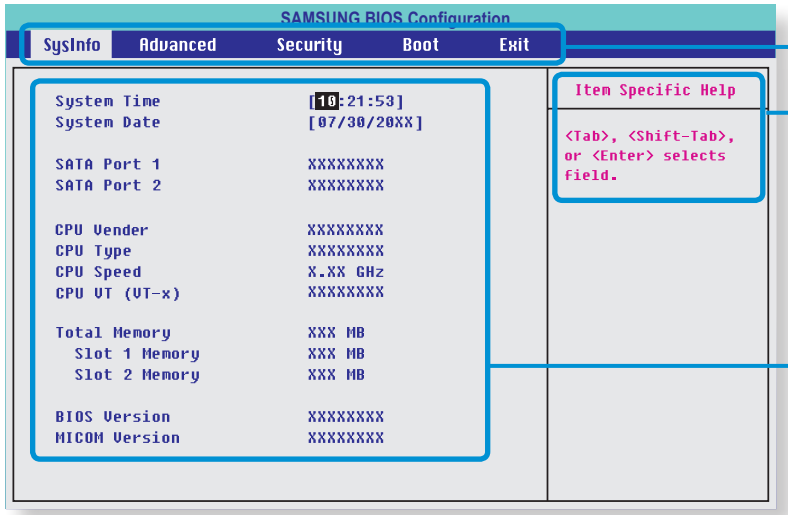
2 When the booting screen (SAMSUNG logo) appears, press the **F2** key to enter the BIOS Setup.

3 After a moment, the BIOS setup screen appears.

The items in the BIOS setup may differ depending on the product.

The BIOS Setup Screen

The BIOS Setup menus and items may differ depending on your computer model.



Setup Menu	Description
SysInfo	This is a description about the basic specifications of the computer.
Advanced	Using this menu, you can configure the major chipsets and additional functions.
Security	Used to configure security functions, including passwords.
Boot	This menu enables you to configure peripherals and booting related settings such as the boot priority.
Exit	Used to exit the Setup either saving the changes or not.

System Setup Keys

In the Setup, you have to use the keyboard.

F1	F1	Press to view the Setup Help.
Up & Down Keys	▲ ▼	Press to move up and down.
F5/F6	F5 F6	Press to change the item value.
F9	F9	Press to load the default Setup settings.
ESC	Esc	Press to return to a higher level menu or to move to the **Exit** menu.
Left & Right Keys	◄ ►	Press to move to another menu.
Enter	Enter ↵	Press to select an item or to enter a sub menu.
F10	F10	Press to save the changes and exit Setup.

The keyboard image may differ from the actual keyboard.

Setting a Boot Password

If you set a password, you have to enter the password when you turn the computer on or enter the BIOS Setup.

By configuring a password, you can restrict system access to authorized users only and protect data and files saved on the computer.

- The password setting provides the following 3 sub menus. (Supervisor Password, User Password and HDD Password)
- Do not lose or forget your password.
- Do not let others know your password.
- If you forget the Supervisor Password or HDD Password, you will need to request assistance from the service center. In this case, a service fee will be charged.
- When you forget the User Password, you can disable the Supervisor Password, and the User Password is also automatically disabled.
- The screen images and terms may differ from actual product depending on the computer model and driver version.

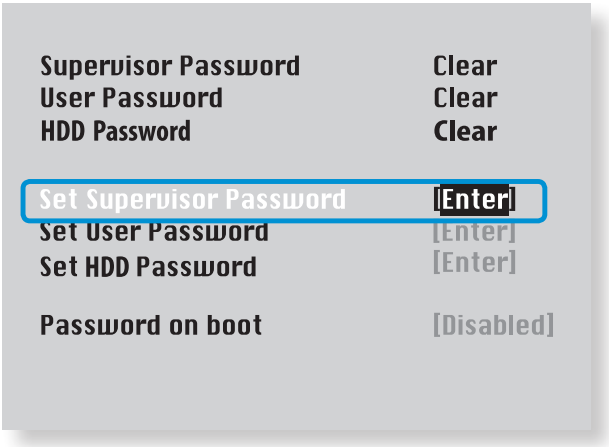
Setting a Supervisor Password

If you set a Supervisor Password, you need to enter the password when you turn the computer on or enter the BIOS Setup.

Setting only the Supervisor Password and User Password is not very secure. You can use an HDD Password as well to increase the security level.

1 Select the **Security** menu in the BIOS Setup.

2 In the **Set Supervisor Password** item, press <**Enter**>.



3 Enter a password, press <**Enter**>, re-enter the password for confirmation, and press <**Enter**> again.

The password can be up to 8 alphanumeric characters. Special characters are not allowed.

4 The supervisor password has been set.

The supervisor password is required to turn the computer on or to enter the BIOS Setup.

For some models, if the password entered message appears in the **Setup Notice** window, the settings are not complete until the <**Enter**> key is pressed.

Setting a Boot Password

Setting a User Password

Using the User Password, you can turn the computer on but you cannot change the major settings of the BIOS Setup because you cannot enter the BIOS Setup.

This helps prevent unauthorized access to the major settings in the BIOS Setup menu.

Before configuring a user password, a **supervisor password** must have been configured. Deactivating the supervisor password also deactivates the user password.

In the **Set User Password** item, press <**Enter**> and complete the procedures from Step 3 of Setting a Supervisor Password.

Setting Up a Boot Password

To setup a boot password, the administrator password (**Set Supervisor Password**) should be set in advance.

Set the **Password on boot** item to **Enabled**.

Once a boot password is set, you have to enter a password to boot up the computer.

Be sure to remember the password for later use.

Setting up a Hard Disk Drive Password (Optional)

If you set a password for a hard disk drive, it cannot be accessed from another computer.

Press <**Enter**> in the **Set HDD Password** item and define a password as described in Step 3 of the Setting up the Supervisor Password.

- The hard disk drive password setting function is not provided for some models.
- **Changing the hard disk drive password**

  For security purposes, you can only change a hard disk drive password after restarting the computer by pressing the computer **Power** button.

  If you cannot change the hard disk drive password or the **HDD Password Frozen** message appears when entering the BIOS Setup and then selecting **Security > HDD Password**, press the **Power** button to turn the computer on again.

Setting a Boot Password

Deactivating the Password

1 Press <**Enter**> on the password to be deactivated. For example, to deactivate a supervisor password in the **Set Supervisor Password** item, press <**Enter**>.

2 In the **Enter Current Password** item, enter the currently configured password and press <**Enter**>.

3 Leave the **Enter New Password** item field empty, and press <**Enter**>.

4 Leave the **Confirm New Password** field empty, and press <**Enter**>.

The password is deactivated.

For some models the password is only canceled if the <**Enter**> key is pressed in the **Setup Notice** window.

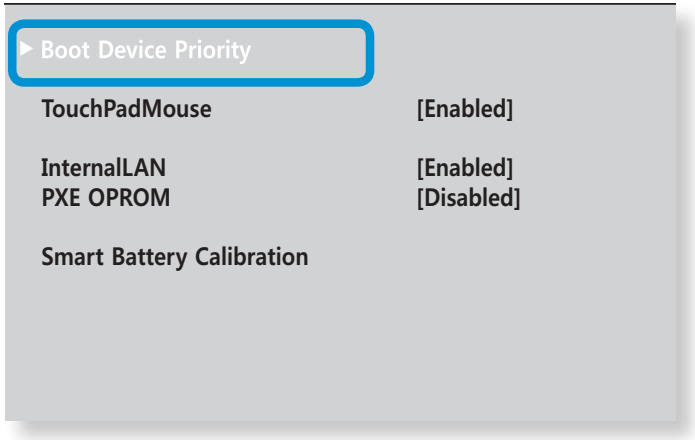
Changing the Boot Priority

As an example, the procedures to change the highest boot priority device to the hard disk drive are described below.

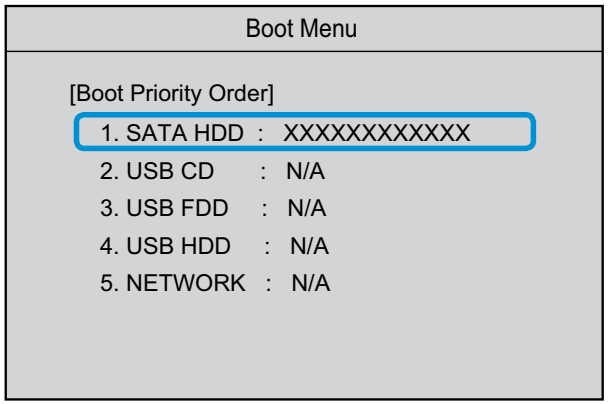
The screen images and terms may differ from actual product depending on the computer model and driver version.

1 Select the **Boot** menu in the BIOS Setup.

2 Press <**Enter**> on the **Boot Device Priority** item.



3 Press the down key (↓) to move to the **SATA HDD** item and press the **F6** key to move up to the top item.



4 Press the **F10** key to save the settings and exit Setup.

The highest boot priority device is now set to the Hard Drive.

If you need to boot to **DOS** using a **USB** device, enter the BIOS Setup, select the **Advanced** menu and set the **Fast BIOS Mode** item to **Disabled**.

Upgrading Memory

One or more memory modules are installed on the computer.

There are 2 memory slots and users can replace the installed memory or add new memory.

- Replace or install new memory only after shutting the computer down completely. Do not replace or install memory when the computer is in Sleep mode.

  Disconnect main power plug and remove the battery before continuing.
- It is recommended that you add a memory module with the same specification (the same manufacturer and the same capacity).
- The images used for the illustration are of a representative model, therefore the images may differ from the the actual product.

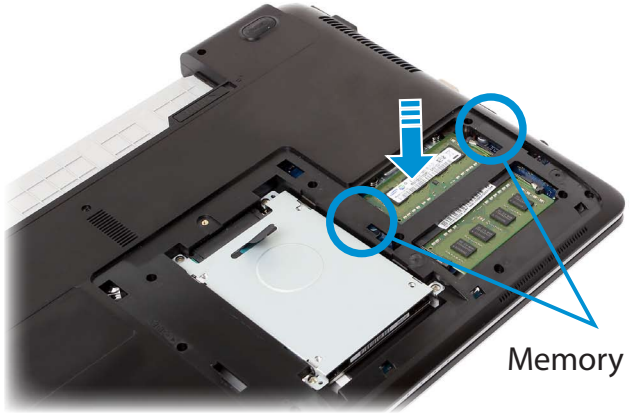
Adding or Replacing Memory Modules

1 Remove the screw on the memory compartment cover at the bottom of the computer using a screw driver.

2 Insert a new memory module into the memory slot at an angle of approximately 30 degrees aligning it to the angle of the memory slot.

Upgrading Memory

3 Push the memory module down so that it is completely fixed. If the memory does not fit easily, push the memory module down while pulling the memory module latches outward.

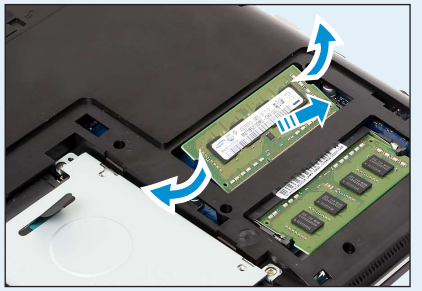


4 Close the memory compartment cover and fasten the screw.

Removing a memory module

Pull the memory module latches outward.
The memory module will pop up.

Remove the memory module out at an angle of 30 degrees.



Battery

Please refer to the following instructions when running the computer on battery power without connecting the AC power.

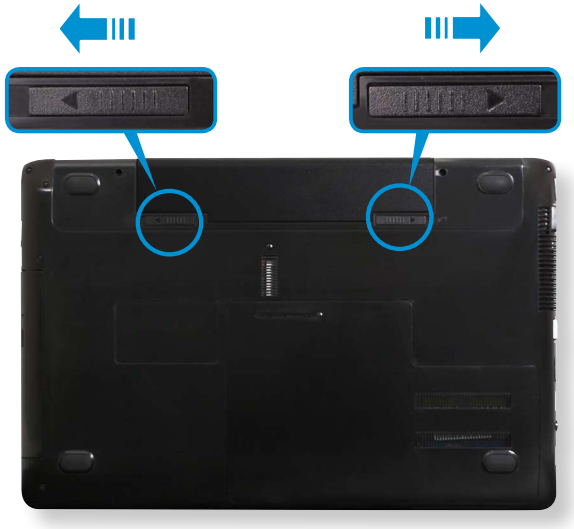
A Lithium-Ion smart battery is supplied with this computer.

- Carefully read and follow the precautions printed on the battery before using the battery.
- Before using your computer for the first time after purchasing it, charge the battery completely.
- The images used for the illustration are of a representative model, therefore the images may differ from the the actual product.

Installing/Removing the Battery

1 Shutdown the system, close the LCD panel and place the computer upside down on a flat surface.

2 Pull the two battery latches **outwards**, then remove the battery.



3 To install the battery again, slide the battery into the system.

The battery latches move inwards and fix the battery automatically.

Check if the battery latch has been moved inwards.

Charging the Battery

1 Attach the battery and connect the AC adapter to the DC-in jack of the computer.

The battery will then start charging.

2 When charging is complete, the Charge LED turns green.

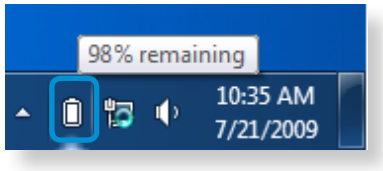
Status	Charge LED	
Charging		Orange
Charging complete		Green
AC adapter not connected		Off

Measuring the Remaining Battery Charge

You can view the battery charge status by completing the following procedures.

Confirming the battery charge in the Taskbar

Disconnect the AC adapter and move the mouse cursor over the battery icon in the system tray of the Taskbar to confirm the remaining battery charge.



Battery Usage Time Information

A battery is an expendable supply, so when using it over a long time, the capacity/battery life is shortened. If the battery life is reduced to under half of its initial time, we recommend purchasing a new battery.

When not using the battery for a long time, store the battery after charging it to 30-40% of its capacity. This extends the battery life time.

Extending the Battery Usage Time

Decreasing the LCD Brightness

Press the Fn + F2 keys on the keyboard to decrease the LCD brightness to extend the battery usage time.

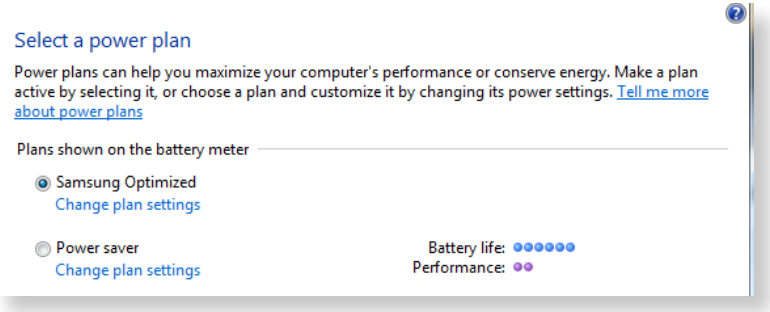
Using the power management program

This program helps you use the battery more efficiently and supports the power mode optimized for the operating environment.

1. Click **Start > Control Panel > Hardware and Sound > Power Options**.

   Alternatively, right-click the power measuring device icon in the notification area of the taskbar and select **Power Options**.

2. If the following screen appears, select one of the modes.


Select a power plan
Power plans can help you maximize your computer's performance or conserve energy. Make a plan active by selecting it, or choose a plan and customize it by changing its power settings. Tell me more about power plans
Plans shown on the battery meter
Samsung Optimized
Change plan settings
Power saver
Change plan settings
Battery life:
Performance:

Extending the Battery Life (Optional)

In the **Easy Settings** program, click **General** and set the **Battery Life Extender** to **ON** or **OFF**.

OFF	This mode maintains 100% of the battery charge when using the computer on AC power. In this case, although the battery use time increases, the battery life is reduced.
ON	This mode maintains 80% of the battery charge when using the computer on AC power. In this case, although the battery use time decreases, the battery life is extended.

Alternatively, to extend the battery life

Press the **F2** key when the Samsung logo appears in the booting sequence to enter the BIOS Setup, select **Advanced > Battery Life Cycle Extension**, and set it to **Enable**. Then you can use the battery life cycle extension mode.

Using the Battery Calibration Function

When charging/discharging the battery repeatedly for a short time only, the battery usage time may be reduced by the difference between the actual battery charge and the remaining charge display.

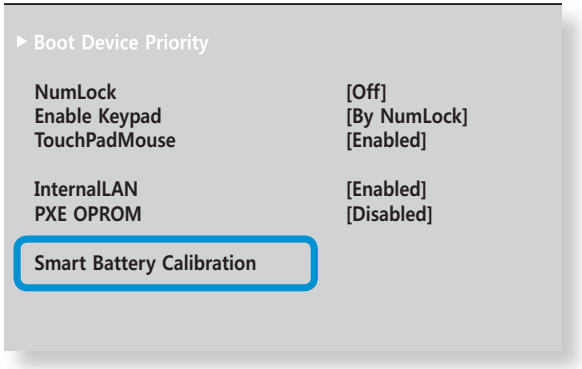
In this case, the actual battery charge and the remaining charge display will be the same by discharging the battery completely using the Battery Calibration function, and then recharging it again.

The screen images and terms may differ from actual product depending on the computer model and driver version.

1 Disconnect the AC power adapter after turning off the computer.

2 Turn the computer back on, and press the **F2** key to enter the Setup screen.

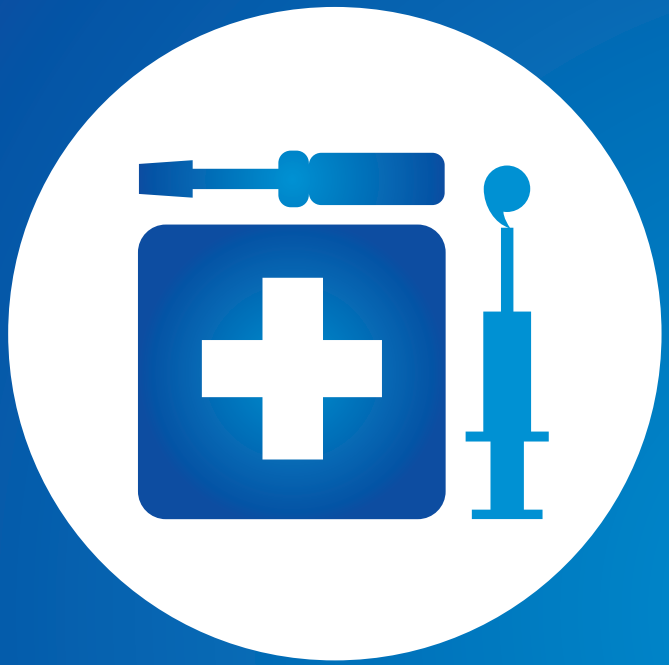
3 Move to the **Boot > Smart Battery Calibration** item using the direction keys and press <**Enter**>.



4 Highlight **Yes** in the **Battery Calibration Confirmation** window and press <**Enter**>.

The Battery Calibration function is activated and the battery is forcefully discharged. To stop the operation, press the <**Esc**> button.

This operation requires 3~5 hours depending on the battery capacity and the remaining battery charge.



Chapter 4.
Backup / Restore

Samsung Recovery Solution (Optional) 87

Samsung Recovery Solution (Optional)

Samsung Recovery Solution is a program that enables restoring or backing up the hard disk drive for when a problem occurs with the computer.

If the computer fails to boot up, you can restore the computer by pressing the F4 key in the booting screen.

- Samsung Recovery Solution may not be provided or the version may differ depending on the model. In addition, some functions may not be provided or may differ depending on the version.

  For more information on using Samsung Recovery Solution, please refer to the online help of the program.
- The screen images in this document may differ from actual product.
- If your computer does not have an internal ODD, you need an external ODD connected to your computer to use the Backup Function or Restore Function using DVDs.
- The System Software function may not be provided depending on the program version.

Samsung Recovery Solution Functions

Backup/Restore Functions

Backup Function
Backs up drive C or required folders and files.

- **Complete Backup**
  Backs up drive C.
- **Data Backup**
  Backs up important folders and files.

A problem occurs

Restore Function
Restores major Windows files, drive C, or folders and files to the previous state.

- **Basic Restore**
  Restores only major Windows files in a short time.
- **Complete Restore**
  Restores drive C to the previous, normal state.
- **Data Restore**
  Restores important files or folders to the previously backed up state.

Samsung Recovery Solution (Optional)

System Software Functions

Samsung Recovery Solution provides system software so that you can reinstall or copy the device drivers and system software necessary for normal operations onto a separate storage device.

Restore Function

Not only can you use Samsung Recovery Solution when Windows is running, but also when you are unable to boot up into Windows. Let's learn how to use Samsung Recovery Solution.

Optional functions such as Initial State Image, Initial Status Backup, and Partitioning are only available in some models.

If the image of the initial state is saved on a DVD or removable storage device, connect the DVD drive or removable storage device to the computer before using the function.

Partition Setup & Initial Status Backup

If you turn your computer on for the first time, the Initial Status Backup function is performed after registering Windows. This function saves an image of the Initial Status of the C drive to a secure location so that users can restore the computer to the Initial Status using the Complete Restore function. An Initial Status Backup is only performed once immediately after the computer is purchased.

1 If you turn the power on for the first time, the Register Windows screen appears. If you register Windows according to the instructions on the screen, the computer will be restarted.

2 After the computer has been restarted, the **Partition Setup** screen appears.

To resize the C and D drives, adjust the partition size using the slide bar and the click **Next**.

The Partition Setup function is only available when the computer is turned on for the first time and will not be available afterwards. Once you have completed the partitioning, it cannot be resized. Partition the disk carefully.

3 The **Initial Status Backup** screen appears.

To continue the Initial Status Backup, click **Restart Now**. The computer will restart.

4 The Initial Status Backup is performed to backup the initial status of the C drive to a secure location. This backup image is used for the Complete Restore function that restores your computer to the initial status.

5 When the Initial Status Backup is complete, restart Windows.

Restoring the computer

Restore is a function that enables restoring the computer to a saved point when the computer was purchased or a user-saved point.

The Restore function provides the Basic Restore and Complete Restore options.

1 **– When Windows is running:**

Click **Samsung Recovery Solution**.

– When Windows does not start:

Turn the computer on and press the F4 key when the boot screen (SAMSUNG logo) appears. After a moment, the computer boots up in Restoration mode and the Samsung Recovery Solution screen appears.

For computers supporting the touch screen function, the touch screen function does not work during Restore Mode. In this case, please use the touchpad or mouse.

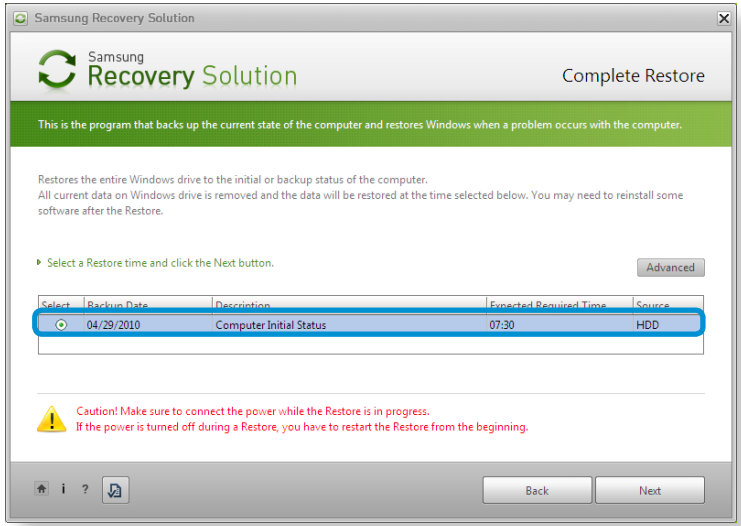
2 If the initial menu screen appears, click **Restore**.

Samsung Recovery Solution
Samsung
Recovery Solution
This is the program that backs up the current state of the computer and restores Windows when a problem occurs with the computer.
To view the troubleshooting method for each symptom, click Select by Symptom.
Select by Symptom
Restore
Backup
System Software
If you move the mouse pointer over a button, you can view a brief description.

If you click **Select by Symptom**, the Select by Symptom menu appears. If you select a symptom, a recommended restoration option will blink. Click the restoration option to continue.

3 Select either **Basic Restore** or **Complete Restore** from the Restore menu.

To restore the computer to the initial state, click **Computer Initial State** and perform the restoration process according to the instructions that appear on the screen.


Samsung Recovery Solution
Samsung
Recovery Solution
Complete Restore
This is the program that backs up the current state of the computer and restores Windows when a problem occurs with the computer.
Restores the entire Windows drive to the initial or backup status of the computer.
All current data on Windows drive is removed and the data will be restored at the time selected below. You may need to reinstall some software after the Restore.
Select a Restore time and click the Next button.
Advanced
Select
Backup Date
Description
Expected Required Time
Source
04/29/2010
Computer Initial Status
07:30
HDD
Caution! Make sure to connect the power while the Restore is in progress.
If the power is turned off during a Restore, you have to restart the Restore from the beginning.
Back
Next

Run **Complete Restore** if the computer does not work even after **Basic Restore** has been completed.

In the **Advanced** menu, you can change the size of the hard drive partitions (e.g. C: and D:).

- Make sure to backup your data in advance, as all data will be deleted after the partition size is changed.
- The **Advanced** menu is only activated when the computer boots up in the restoration area.
  (by pressing the F4 key during the booting sequence.)

Since a Complete Restore deletes all user data as well as additionally installed programs, please backup your important data first using the Data Backup function, before running Complete Restore.

4 The computer boots up into restoration mode and the restoration progress message appears. If you click **OK**, the restoration begins. The restoration may take some time, please wait for a moment.

5 When the 'Restart the System' message appears after the restoration is complete, click **OK** to restart the system.

Make sure that the power cord is connected while the restoration is in process. The first time the computer boots up after a Complete Restore has been performed, the speed of the boot process may be slowed down due to the system optimization process. At this time, do not shut the computer down by force.

Complete Backup/Restore

A **Complete Backup** saves the complete image of the C drive onto another drive or DVD. A **Complete Restore** restores the image file saved by the Complete Backup onto the C drive.

Complete Backup

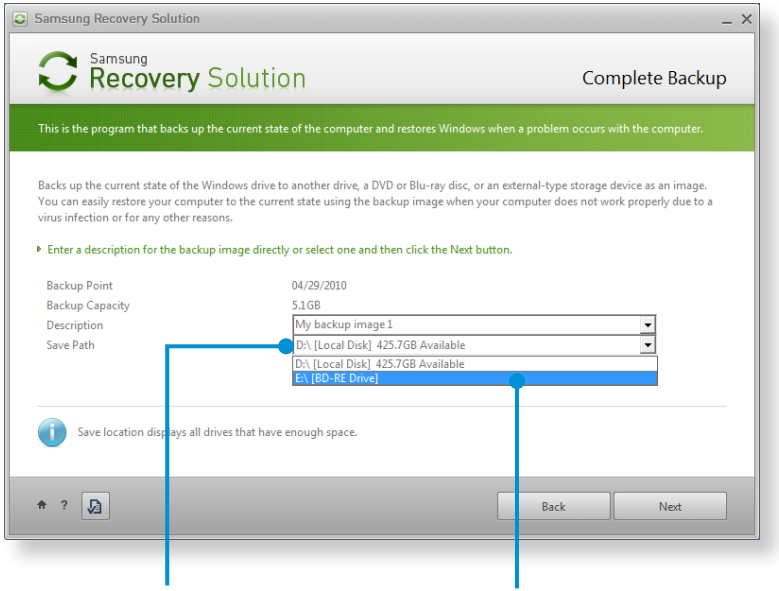
If you perform the Complete Backup function onto a DVD or removable storage device, you can restore your computer even when a problem occurs with the hard disk or when the restoration area is removed.

To create a backup, a removable storage device with at least 15 GB of free space is required.

1 Click **Backup** in the start screen of the Samsung Recovery Solution.

2 Enter a description of the current status of the computer and click **Next**.

After connecting a DVD drive or removable storage device, you can specify the DVD drive or removable storage device as the Save Path.


Samsung Recovery Solution
Samsung
Recovery Solution
Complete Backup
This is the program that backs up the current state of the computer and restores Windows when a problem occurs with the computer.
Backs up the current state of the Windows drive to another drive, a DVD or Blu-ray disc, or an external-type storage device as an image. You can easily restore your computer to the current state using the backup image when your computer does not work properly due to a virus infection or for any other reasons.
Enter a description for the backup image directly or select one and then click the Next button.
Backup Point
04/29/2010
Backup Capacity
5.1GB
Description
My backup image 1
Save Path
D:\ [Local Disk] 425.7GB Available
D:\ [Local Disk] 425.7GB Available
E:\ [BD-RE Drive]
Save location displays all drives that have enough space.
Back
Next

Select Drive D. Select the DVD drive.

3 When the option selection item appears, select an option and click **Next**.

The LiveImaging and System Software Backup functions are supported as options for the Complete Backup operation.

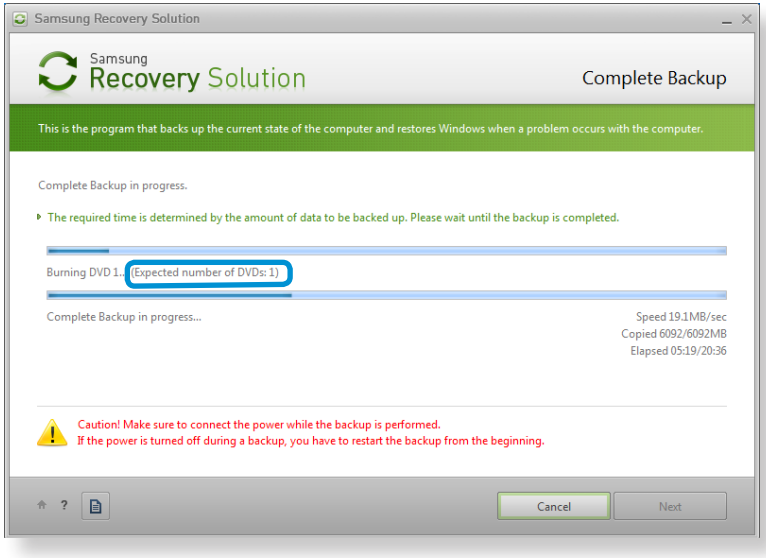
- **LiveImaging:** Performs the Complete Backup operation while Windows is running. The backup operation using LiveImaging may slow down if the hard disk drive is accessed frequently by other applications.
- **System Software Backup:** This function backs up the system software on to the DVD after the completion of the Complete Backup operation.

Samsung Recovery Solution (Optional)

4 When the system restarts in Restoration Mode, the **Complete Backup** operation begins. Continue with the backup by following the instructions.

- Samsung Recovery Solution supports the DVD+R, DVD-R, DVD+RW and DVD-RW formats.
- If the LiveImaging option has been selected, the Complete Backup operation begins without the computer being restarted.

5 Continue with the Complete Backup operation by following the instructions.


Samsung Recovery Solution
Samsung
Recovery Solution
Complete Backup
This is the program that backs up the current state of the computer and restores Windows when a problem occurs with the computer.
Complete Backup in progress.
The required time is determined by the amount of data to be backed up. Please wait until the backup is completed.
Burning DVD 1... (Expected number of DVDs: 1)
Complete Backup in progress...
Speed 19.1MB/sec
Copied 6092/6092MB
Elapsed 05:19/20:36
Caution! Make sure to connect the power while the backup is performed.
If the power is turned off during a backup, you have to restart the backup from the beginning.
Cancel
Next

6 When the 'Restart the System' message appears after the backup is complete, click **OK** to restart the system.

If the LiveImaging option has been selected, the computer is not restarted.

Complete Restore

1 **– When backing up onto DVD**

Turn the computer on and insert the backup DVD into the DVD drive.
If there are multiple backup DVDs, insert the first DVD.

– When backing up to a removable storage device

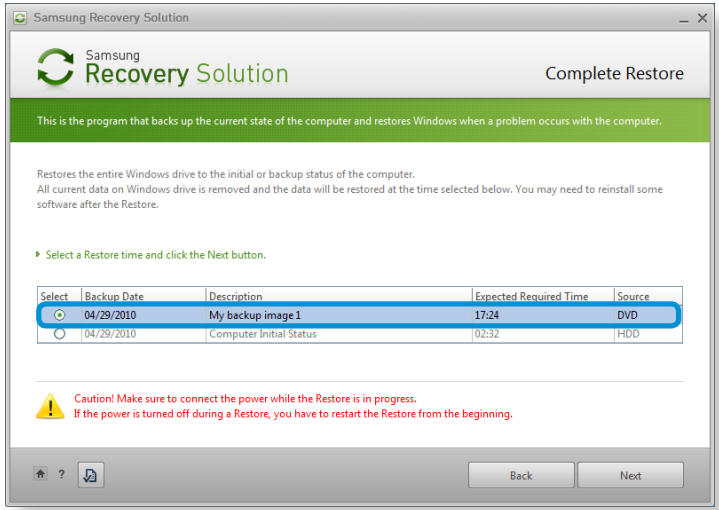
Connect the removable storage device.

– When backing up to another drive

Proceed to Step 2.

2 When the Samsung Recovery Solution start screen appears, click **Restore** and then click **Complete Restore**.

3 Select a **Complete Backup** restoration point in the restoration point selection screen and click the **Next** button. The system is restarted.


Samsung Recovery Solution
Samsung
Recovery Solution
Complete Restore
This is the program that backs up the current state of the computer and restores Windows when a problem occurs with the computer.
Restores the entire Windows drive to the initial or backup status of the computer.
All current data on Windows drive is removed and the data will be restored at the time selected below. You may need to reinstall some software after the Restore.
Select a Restore time and click the Next button.
Select
Backup Date
Description
Expected Required Time
Source
04/29/2010
My backup image 1
17:24
DVD
04/29/2010
Computer Initial Status
02:32
HDD
Caution! Make sure to connect the power while the Restore is in progress.
If the power is turned off during a Restore, you have to restart the Restore from the beginning.
Back
Next

4 The restoration progress message appears after the computer boots up in restoration mode. If you click **OK**, the restoration begins.

If multiple DVDs have been used for a Complete Backup, whenever burning a DVD is completed, the “Insert the next DVD” message will appear.

5 When the ‘Restart the System’ message appears after the restoration is complete, click **OK** to restart the system. The Complete Restore has been completed.

Data Backup/Restore

The **Data Backup** function enables you to backup specific files and folders to another drive, DVD or removable storage device. **Data Restore** enables you to restore data using the data saved by a Data Backup when data is lost. This guide describes the Backup and Restore procedures on the basis of backing up and restoring by using DVD.

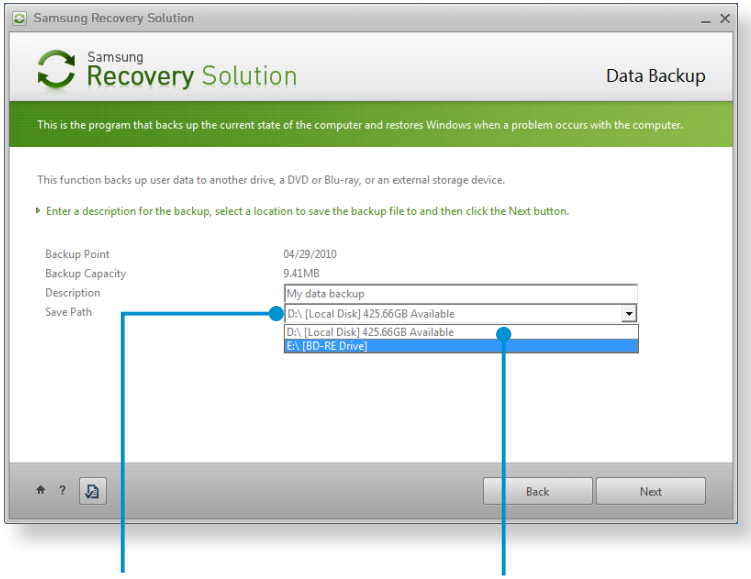
Data Backup

1 When the Samsung Recovery Solution start screen appears, click **Backup** and then click **Data Backup**.

2 In the data selection screen, select either **Basic Selection** or **Select from all**, select a folder or file to be backed up, and then click the **Next** button.

3 Enter a description for the backup in the **Description** field so that you can easily recognize it later and specify the **Save Path**.

If your computer has a DVD-Writer, you can specify the DVD drive as the Save Path.


Samsung Recovery Solution
Samsung
Recovery Solution
Data Backup
This is the program that backs up the current state of the computer and restores Windows when a problem occurs with the computer.
This function backs up user data to another drive, a DVD or Blu-ray, or an external storage device.
Enter a description for the backup, select a location to save the backup file to and then click the Next button.
Backup Point
04/29/2010
Backup Capacity
9.41MB
Description
My data backup
Save Path
D:\ [Local Disk] 425.66GB Available
D:\ [Local Disk] 425.66GB Available
E:\ [BD-RE Drive]
Back
Next
Select Drive D.
Select the DVD drive.

If you have specified a hard disk drive or a removable disk as the Save Path, the **SamsungRecovery\SamsungData** folder is created on the corresponding drive (e.g. D:\) and the data is saved to the folder. Take care to not delete the folder by mistake or on purpose.

4 If you click the Next button, the Data Backup begins. If you have selected the DVD drive as the Save Path, the “Insert a blank DVD” message appears. Insert a blank DVD and click the OK button.

5 The “Backup is completed” message appears.

Data Restore

1 **– When backing up onto DVD**

Turn the computer on and insert the backup DVD into the DVD drive.

– When backing up to a removable storage device

Connect the removable storage device.

– When backing up to another drive

Proceed to Step 2.

2 When the initial menu screen appears, click **Restore** and then click **Data Restore**.

3 Select a backup item to be restored in the backup list and click the **Next** button.

4 Select a folder for the restoration and click the **Next** button. Data Restore begins.

5 When Data Restore is completed, check if the data has been restored to the specified folder.

System Software Function

The System Software function is a function that enables you to reinstall device drivers and System Software Programs or back up those programs.

The system software function is supported by **Samsung Recovery Solution version 4** or **later**. Therefore, the function may not be supported depending on the version.

The System Software Installation Function only works in Microsoft Windows.

Installing System Software

1 When the initial menu screen appears, click **System Software > System Software Installation**.

Samsung Recovery Solution
Samsung
Recovery Solution
System Software
This is the program that backs up the current state of the computer and restores Windows when a problem occurs with the computer.
The [System Software Installation] installs required device drivers and applications.
The [System Software Backup] backs up system software such as device drivers and applications.
Select a function.
System Software Installation
System Software Backup
This function enables reinstalling device drivers and application supplied by Samsung Electronics.
Back

2 Move to the **Easy Software Manager**.

Using the **Easy Software Manager**, you can install device drivers and applications.

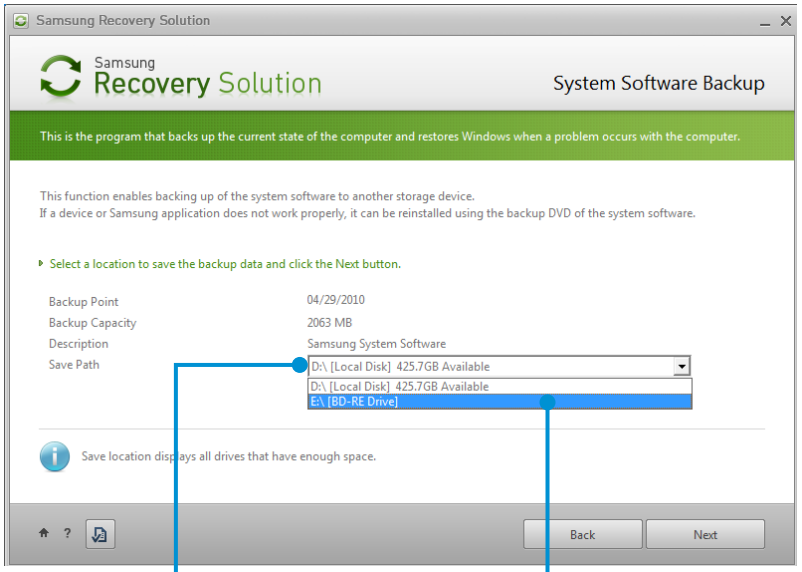
3 After the installation is complete, the computer will restart.

System Software Backup

1 When the initial menu screen appears, click **System Software > System Software Backup**.

2 Specify the Save Path.

If your computer has a DVD-Writer, you can specify the DVD drive as the Save Path.


Samsung Recovery Solution
Samsung
Recovery Solution
System Software Backup
This is the program that backs up the current state of the computer and restores Windows when a problem occurs with the computer.
This function enables backing up of the system software to another storage device.
If a device or Samsung application does not work properly, it can be reinstalled using the backup DVD of the system software.
Select a location to save the backup data and click the Next button.
Backup Point
04/29/2010
Backup Capacity
2063 MB
Description
Samsung System Software
Save Path
D:\ [Local Disk] 425.7GB Available
D:\ [Local Disk] 425.7GB Available
E:\ [BD-RE Drive]
Save location displays all drives that have enough space.
Back
Next

Select Drive D. Select the DVD drive.

If you have specified a hard disk drive or a removable disk as the Save Path, the **SamsungSoftware** folder is created on the corresponding drive (e.g. D:\) and the system software programs are saved to that folder. Take care to not delete the folder.

3 If you click the **Next** button, the Software Backup begins. If you have selected the DVD drive as the Save Path, the "Insert a blank DVD" message appears. Insert a blank DVD and click the **OK** button.

4 After the backup, the **System Software Backup is completed** message appears.

- If you want to install the System Software Programs backed up on the drive, run the **SecSWMgrGuide.exe** file in the **SystemSoftware** folder.
- When installing System Software Programs from the backed-up DVD, insert the DVD and follow the System Software Installation directions.
- To delete Samsung Recovery Solution, refer to the Help section of the program.

Recovery Solution Representation (Optional)

What is a Recovery Area?

- Samsung computers have an additional partition to recover computers or save backup files.
  (Only for models with the Samsung Recovery Solution.)

  This partition is called a Recovery Area and it includes a recovery image that comprises of the OS and application programs.
- You can either double-click the Samsung Recovery Solution icon on the desktop or press F4 while booting the computer to enter the Recovery Area. Then you can back up the present computer state or recover the computer from backed up images.
- For deleting the Recovery Area, you need to use an additional Recovery Area Removal Tool. After deleting the recovery area, you can use the newly created partition for other uses, such as for saving personal data. Be careful that once the recovery area is deleted, the Samsung Recovery Solutions will not work anymore.

The capacity representation of the hard disk drive(HDD) in Windows is different from the product specifications.

- The capacity of the storage device (HDD) of the manufacturer is calculated assuming that 1KB=1,000 Bytes. However, the operating system (Windows) calculates the storage device capacity assuming that 1KB=1,024 Bytes, and therefore the capacity representation of the HDD in Windows is smaller than the actual capacity.

  This is due to the difference in capacity calculation and does not mean the installed HDD is different from the product specifications.
- The capacity representation in Windows may be smaller than the actual capacity because some programs occupy a certain area of the HDD outside of Windows.
- For models with Samsung Recovery Solution, the HDD capacity representation in Windows may be smaller than the actual capacity because Samsung Recovery Solution uses a hidden area of about 5~20GB of the HDD to save the recovery image, and that hidden area is not counted towards the total size available to Windows.

  The size of Samsung Recovery Solution varies by models because of the different size of applied programs.

Chapter 5. Appendix

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Important Safety Information

Safety Instructions

Your system is designed and tested to meet the latest standards for safety of information technology equipment. However, to ensure safe use of this product, it is important that the safety instructions marked on the product and in the documentation are followed.

Always follow these instructions to help guard against personal injury and damage to your system.

Setting Up your System

- Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.
- Do not use this product near water or a heat source such as a radiator.
- Set up the system on a stable work surface.
- The product should be operated only with the type of power source indicated on the rating label.
- Ensure that the electrical outlet you are using to power your equipment is easily accessible in case of fire or short circuit.
- If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area.
- Openings in the computer case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space, at least 6 inches (15 cm), around the system for ventilation when you set up your work area. Never insert objects of any kind into the computer ventilation openings.
- Ensure that the fan vents on the bottom of the casing are clear at all times. Do not place the computer on a soft surface, doing so will block the bottom vents.
- If you use an extension cord with this system, make sure that the total power rating on the products plugged into the extension cord does not exceed the extension cord power rating.
- For Notebooks with glossy display bezels the user should consider the placement of the Notebook as the bezel may cause disturbing reflections from surrounding light and bright surfaces.

Important Safety Information

Care During Use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill anything on the system. The best way to avoid spills is to not eat or drink near your system.
- Some products have a replaceable CMOS battery on the system board. There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer.

  Dispose of batteries according to the manufacturers instructions. If the CMOS battery requires replacement insure that a qualified technician performs the task.
- When the computer is turned off, a small amount of electrical current still flows through the computer.
  To avoid electrical shock, always unplug all power cables, remove the battery and modem cables from the wall outlets before cleaning the system.
- Unplug the system from the wall outlet and refer servicing to qualified personnel if:
  - The power cord or plug is damaged.
  - Liquid has been spilled into the system.
  - The system does not operate properly when the operating instructions are followed.
  - The system was dropped or the casing is damaged.
  - The system performance changes.

The Instruction On Safety Operation of NotePC

1. When installing and operating devices please refer to safety requirements in the user guide.
2. Devices can be used only with the equipment specified in the technical specifications of the devices.
3. If any smell of burning or smoke is detected from the computer the unit should be switched off and battery removed. The unit should be checked by a qualified technician before reuse.
4. Service and repair of devices should be carried out by authorized service centers.
5. Do not allow your portable computer to operate with the base resting directly on exposed skin for extended periods of time. The surface temperature of the base will rise during normal operation (particularly when AC Power is present). Allowing sustained contact with exposed skin can cause discomfort or eventually a burn.

Replacement Parts and Accessories

Use only replacement parts and accessories recommended by manufacturer.

To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.

Do not use this product in areas classified as hazardous. Such areas include patient care areas of medical and dental facilities, oxygen rich environments, or industrial areas.

Battery Disposal

Do not put rechargeable batteries or products powered by non-removable rechargeable batteries in the garbage.

Contact the Samsung Helpline for information on how to dispose of batteries that you cannot use or recharge any longer.

Follow all local regulations when disposing of old batteries.

THERE IS A RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Laser Safety

All systems equipped with CD or DVD drives comply with the appropriate safety standards, including IEC 60825-1. The laser devices in these components are classified as “Class 1 Laser Products” under a US Department of Health and Human Services (DHHS) Radiation Performance Standard. Should the unit ever need servicing, contact an authorized service location.

- **Laser Safety Note:**

  Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. To prevent exposure to laser beams, do not try to open the enclosure of a CD or DVD drive.

- Class 1M laser radiation when operating part is open.

  Do not view directly with optical instruments.

- Class 3B invisible laser radiation when open.

  Avoid exposure to the beam.

Connect and Disconnect the AC adapter

The socket-outlet shall be installed near the equipment and shall be easily accessible.

Do not unplug the power cord by pulling the cable only.

Power Cord Requirements

The power cord set (wall plug, cable and AC adapter plug) you received with your computer meets the requirements for use in the country where you purchased your equipment.

Power cord sets for use in other countries must meet the requirements of the country where you use the computer. For more information on power cord set requirements, contact your authorized dealer, reseller, or service provider.

General Requirements

The requirements listed below are applicable to all countries:

- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
- The power cord set must have a minimum current capacity of 7 A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system. (USA ONLY)
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C7 (or C5) connector, for mating with appliance inlet on the computer.

Wireless Guidance

(If fitted with 2.4G band or 5G band)

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz Band, may be present (embedded) in your notebook system. The following section is a general overview of considerations while operating a wireless device.

Additional limitations, cautions, and concerns for specific countries are listed in the specific country sections (or country group sections). The wireless devices in your system are only qualified for use in the countries identified by the Radio Approval Marks on the system rating label. If the country you will be using the wireless device in, is not listed, please contact your local Radio Approval agency for requirements. Wireless devices are closely regulated and use may not be allowed.

The RF field strength of the wireless device or devices that may be embedded in your notebook are well below all international RF exposure limits as known at this time. Because the wireless devices (which may be embedded into your notebook) emit less energy than is allowed in radio frequency safety standards and recommendations, manufacturer believes these devices are safe using. Regardless of the power levels, care should be taken to minimize human contact during normal operation.

Some circumstances require restrictions on wireless devices. Examples of common restrictions are listed on the next page:

- Radio frequency wireless communication can interfere with equipment on commercial aircraft. Current aviation regulations require wireless devices to be turned off while traveling in an airplane.
  802.11ABGN (also known as wireless Ethernet or Wifi) and Bluetooth communication devices are examples of devices that provide wireless communication.
- In environments where the risk of interference to other devices or services is harmful or perceived as harmful, the option to use a wireless device may be restricted or eliminated. Airports, Hospitals, and Oxygen or flammable gas laden atmospheres are limited examples where use of wireless devices may be restricted or eliminated. When in environments where you are uncertain of the sanction to use wireless devices, ask the applicable authority for authorization prior to use or turning on the wireless device.
- Every country has different restrictions on the use of wireless devices. Since your system is equipped with a wireless device, when traveling between countries with your system, check with the local Radio Approval authorities prior to any move or trip for any restrictions on the use of a wireless device in the destination country.
- If your system came equipped with an internal embedded wireless device, do not operate the wireless device unless all covers and shields are in place and the system is fully assembled.

- Wireless devices are not user serviceable. Do not modify them in any way. Modification to a wireless device will void the authorization to use it. Please contact manufacturer for service.
- Only use drivers approved for the country in which the device will be used. See the manufacturer System Restoration Kit, or contact manufacturer Technical Support for additional information.

United States of America

USA and Canada Safety Requirements and Notices

Do not touch or move antenna while the unit is transmitting or receiving.

Do not hold any component containing the radio such that the antenna is very close or touching any exposed parts of the body, especially the face or eyes, while transmitting.

Do not operate the radio or attempt to transmit data unless the antenna is connected; if not, the radio may be damaged.

Use in specific environments:

The use of wireless devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.

The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).

The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.

Explosive Device Proximity Warning

Do not operate a portable transmitter (such as a wireless network device) near unshielded blasting caps or in an explosive environment unless the device has been modified to be qualified for such use.

Use On Aircraft Caution

Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.

Other Wireless Devices

Safety Notices for Other Devices in the Wireless Network:
Refer to the documentation supplied with wireless Ethernet adapters or other devices in the wireless network.

The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification to said product not expressly approved by Intel could void the user's authority to operate this device.

Unintentional Emitter per FCC Part 15

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet helpful: “Something About Interference.”

This is available at FCC local regional offices. Our company is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by our company. The correction will be the responsibility of the user. Use only shielded data cables with this system.

Intentional emitter per FCC Part 15

(If fitted with 2.4G band or 5G band)

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz Band, may be present (embedded) in your notebook system. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in the United States of America if an FCC ID number is on the system label.

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems. High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and /or damage this device.

Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

Wireless devices are not user serviceable. Do not modify them in any way.

Modification to a wireless device will void the authorization to use it. Contact manufacturer for service.

Health and safety information

Exposure to Radio Frequency (RF) Signals

Certification Information (SAR)

This product can contain an embedded radio transmitter and receiver. It is designed and manufactured not to exceed the exposure limits for radio frequency (RF) energy set by the Federal Communications Commission (FCC) of the U.S. government. These FCC exposure limits are derived from the recommendations of two expert organizations, the National Council on Radiation Protection and Measurement (NCRP) and the Institute of Electrical and Electronics Engineers (IEEE). In both cases, the recommendations were developed by scientific and engineering experts drawn from industry, government, and academia after extensive reviews of the scientific literature related to the biological effects of RF energy.

The exposure limit set by the FCC for wireless devices employs a unit of measurement known as the Specific Absorption Rate (SAR). The SAR is a measure of the rate of absorption of RF energy by the human body expressed in units of watts per kilogram (W/kg). The FCC requires wireless devices to comply with a safety limit of 1.6 watts per kilogram (1.6 W/kg). The FCC exposure limit incorporates a substantial margin of safety to give additional protection to the public and to account for any variations in measurements.

SAR tests are conducted using standard operating positions accepted by the FCC with the wireless transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. This is because the device is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output.

Before a new model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the exposure limit established by the FCC. Tests for each model are performed in positions and locations (e.g. at the bottom on the body) as required by the FCC.

For body worn operation, this model has been tested and meets the FCC RF exposure guidelines when used with Samsung accessory designated for this product. Non-compliance with the above restrictions may result in violation of FCC RF exposure guidelines.

SAR information on this and other model can be viewed on-line at http://www.fcc.gov/oet/ea/fccid/. This site uses this product FCC ID number on the outside of the product. Sometimes it may be necessary to remove the battery pack to find the number. Once you have the FCC ID number for a particular product, follow the instructions on the website and it should provide values for typical or maximum SAR for a particular product.

Canada

Unintentional Emitter per ICES-003

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limitesapplicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada.

Intentional Emitter per RSS 210

This device complies with RSS 210 of Industry Canada. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device."

L' utilisation de ce dispositif est autorisée seulement aux conditions suivantes : (1) il ne doit pas produire de brouillage et (2) l' utilisateur du dispositif doit étre prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

The term "IC" before the equipment certification number only signifies that the Industry Canada technical specifications were met. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication. To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

Pour empecher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit etre utilize a l'interieur et devrait etre place loin des fenetres afin de Fournier un ecram de blindage maximal. Si le matriel (ou son antenne d'emission) est installe a l'exterieur, il doit faire l'objet d'une licence.

(If fitted with 2.4G band or 5G band)

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz Band, may be present (embedded) in your notebook system. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in Canada if an Industry Canada ID number is on the system label.

When using IEEE 802.11a wireless LAN, this product is restricted to indoor use due to its operation in the 5.15- to 5.25-GHz frequency

range. Industry Canada requires this product to be used indoors for the frequency range of 5.15 GHz to 5.25 GHz to reduce the potential for harmful interference to co-channel mobile satellite systems. High power radar is allocated as the primary user of the 5.25- to 5.35-GHz and 5.65 to 5.85-GHz bands. These radar stations can cause interference with and/or damage to this device.

The maximum allowed antenna gain for use with this device is 6dBi in order to comply with the E.I.R.P limit for the 5.25- to 5.35 and 5.725 to 5.85 GHz frequency range in point-to-point operation.

The power output of the wireless device (or devices), which may be embedded in your notebook, is well below the RF exposure limits as set by Industry Canada.

Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

To prevent radio interference to licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

Wireless devices are not user serviceable. Do not modify them in any way. Modification to a wireless device will void the authorization to use it. Contact manufacturer for service.

(Si l'appareil est équipé d'une bande 2,4 G ou 5 G)

Des dispositifs de basse puissance, de type radio LAN (périphériques de communication sans fil par radiofréquence RF) fonctionnant sur une bande de 2.4GHz/5GHz sont peut-être intégrés dans votre appareil. Cette section est applicable uniquement si ces dispositifs sont présents. Consultez l'étiquette du système pour vérifiez la présence de dispositifs sans fil.

Les dispositifs sans fil qui peuvent être intégrés dans votre système sont uniquement aptes pour une utilisation au Canada si l'étiquette du système présente un nombre d'identification d'Industrie Canada.

En cas d'utilisation d'un LAN sans fil IEEE 802.11a, ce produit ne peut être utilisé qu'à l'intérieur en raison de son fonctionnement dans une plage des fréquences allant de 5,15 à 5,25 GHz. Industrie Canada exige l'utilisation de ce produit à l'intérieur pour une plage des fréquences allant de 5,15 à 5,25 GHz afin de réduire les éventuelles interférences nuisibles avec les systèmes mobiles par satellite du même canal. Le radar de grande puissance est considéré comme l'utilisateur principal des bandes de 5,25 à 5,35 GHz et de 5,65 à 5,85 GHz. Ces stations radar peuvent provoquer des interférences avec ce périphérique et/ou l'endommager.

Le gain d'antenne maximum autorisé avec ce périphérique est de 6 dBi afin de respecter la limite de P.I.R.E. pour une plage des fréquences de 5,25 à 5,35 GHz et de 5,725 à 5,85 GHz dans un fonctionnement point à point.

La sortie de puissance du dispositif sans fil (ou des dispositifs) qui peut être intégré dans votre système est bien inférieure aux limites d'exposition de RF établies par Industrie Canada.

Son utilisation est soumise aux deux conditions suivantes : 1) ce dispositif ne peut pas provoquer d'interférences nuisibles et 2 2) ce dispositif doit accepter toute interférence reçue, y compris les interférences qui peuvent provoquer des anomalies dans le système.

Afin de prévenir des interférences de radio au service autorisé, ce dispositif est prévu pour être utilisé à l'intérieur et éloigné des fenêtres pour fournir une protection maximum. Un équipement (ou son antenne de transmission) qui est installé à l'extérieur est sujet à une autorisation.

Les dispositifs sans fil ne peuvent pas être réparés par l'utilisateur. Ne les modifiez en aucune façon. La modification d'un dispositif sans fil annulera votre autorisation à son utilisation. Contactez le fabricant pour la réparation.

Brazil

Este produto esta homologado pela ANATEL, de acordo com os procedimentos regulamentados pela Resolucao 242/2000, e atende aos requisitos tecnicos aplicados.

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

European Union

European Union CE Marking and Compliance Notices

Products intended for sale within the European Union are marked with the Conformité Européene (CE) Marking, which indicates compliance with the applicable Directives and European standards and amendments identified below. This equipment also carries the Class 2 identifier.

The following information is only applicable to systems labeled with the CE mark CE.

European Directives CE

This Information Technology Equipment has been tested and found to comply with the following European directives:

- EMC Directive 2004/108/EC
- Low Voltage Directive 2006/95/EC
- R&TTE Directive 1999/5/EC

European Radio Approval Information (for products fitted with EU-approved radio devices)

This Product is a Notebook computer; low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz band, may be present (embedded) in your notebook system which is intended for home or office use. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

CE !

Wireless devices that may be in your system are only qualified for use in the European Union or associated areas if a CE mark CE with a Notified Body Registration Number and the Alert Symbol is on the system label.

The power output of the wireless device or devices that may be embedded in you notebook is well below the RF exposure limits as set by the European Commission through the R&TTE directive.

The low band 5.15 - 5.35 GHz is for indoor use only.

See 802.11b and 802.11g restrictions for specific countries or regions within countries under the heading “European Economic Area Restrictions” below.

EU R&TTE Compliance Statements

cs	**Česky [Czech]**	Samsung tímto prohlašuje, že tento Notebook PC je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
da	**Dansk [Danish]**	Undertegnede Samsung erklærer herved, at følgende udstyr Notebook PC overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
de	**Deutsch [German]**	Hiermit erklärt Samsung, dass sich das Gerät Notebook PC in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
et	**Eesti [Estonian]**	Käesolevaga kinnitab Samsung seadme Notebook PC vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
en	**English**	Hereby, Samsung, declares that this Notebook PC is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
es	**Español [Spanish]**	Por medio de la presente Samsung declara que el Notebook PC cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
el	**Ελληνική [Greek]**	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Samsung ΔΗΛΩΝΕΙ ΟΤΙ Notebook PC ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
fr	**Français [French]**	Par la présente Samsung déclare que l'appareil Notebook PC est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
it	**Italiano [Italian]**	Con la presente Samsung dichiara che questo Notebook PC è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
lv	**Latviski [Latvian]**	Ar šo Samsung deklarē, ka Notebook PC atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
lt	**Lietuvių [Lithuanian]**	Šiuo Samsung deklaruoja, kad šis Notebook PC atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
nl	**Nederlands [Dutch]**	Hierbij verklaart Samsung dat het toestel Notebook PC in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt	**Malti [Maltese]**	Hawnhekk, Samsung, jiddikjara li dan Notebook PC jikkonforma mal-ħtiāijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.

hu	**Magyar [Hungarian]**	Alulírott, Samsung nyilatkozom, hogy a Notebook PC megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl	**Polski [Polish]**	Niniejszym Samsung oświadcza, Że Notebook PC jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt	**Português [Portuguese]**	Samsung declara que este Notebook PC está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
sl	**Slovensko [Slovenian]**	Samsung izjavlja, da je ta Notebook PC v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
sk	**Slovensky [Slovak]**	Samsung týmto vyhlasuje, že Notebook PC spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
fi	**Suomi [Finnish]**	Samsung vakuuttaa täten että Notebook PC tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv	**Svenska [Swedish]**	Härmed intygar Samsung att denna Notebook PC står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
	Íslenska [Icelandic]	Hér með lýsir Samsung yfir því að Notebook PC er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
no	**Norsk [Norwegian]**	Samsung erklærer herved at utstyret Notebook PC er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.
	Türkiye [Türkçe]	Bu belge ile, Samsung bu Notebook PC'nin 1999/5/EC Yönetmeliğinin temel gerekliliklerine ve ilgili hükümlerine uygun olduğunu beyan eder.

To view the EU Declaration of Conformity for this product (in English only), go to: http://www.samsung.com/uk/support/main/supportMain.do or http://www.samsung.com/uk/support then search the model number of the product.

If the Declaration of Conformity for the model you are interested in is not available on our web-site, please contact your distributor or below address.

doc.eu@samsung.com

Manufacturer Information

Samsung Electronics Co., Ltd.

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Samsung Electronics Suzhou Computer Co., Ltd.

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For the web or the phone number of Samsung Service Centre, see the Warranty or contact the retailer where you purchased your product.

European Economic Area Restrictions

Local Restriction of 802.11b/802.11g Radio Usage

[Note to integrator: The following statements on local restrictions must be published in all end-user documentation provided with the system or product incorporating the wireless product.]

Due to the fact that the frequencies used by 802.11b/802.11g wireless LAN devices may not yet be harmonized in all countries, 802.11b/802.11g products are designed for use only in specific countries or regions, and are not allowed to be operated in countries or regions other than those of designated use.

As a user of these products, you are responsible for ensuring that the products are used only in the countries or regions for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country or region of use. Any deviation from permissible settings and restrictions in the country or region of use could be an infringement of local law and may be punished as such.

The European variant is intended for use throughout the European Economic Area. However, authorization for use is further restricted in particular countries or regions within countries, as follows:

General

European standards dictate maximum radiated transmit power of 100 mW effective isotropic radiated power (EIRP) and the frequency range 2400 – 2483.5 MHz.

The low band 5.15 - 5.35 GHz is for indoor use only.

Belgium

The product may be used outdoors, but for outdoor transmissions over a distance of 300m or more, a license from the BIPT is required.

This restriction should be indicated in the manual as follows:

Dans le cas d'une utilisation privée, à l'extérieur d'un bâtiment, au-dessus d'un espace public, aucun enregistrement n'est nécessaire pour une distance de moins de 300m. Pour une distance supérieure à 300m un enregistrement auprès de l'IBPT est requise. Pour une utilisation publique à l'extérieur de bâtiments, une licence de l'IBPT est requise. Pour les enregistrements et licences, veuillez contacter l'IBPT.

France

The low band 5.15 - 5.35 GHz is for indoor use only.

RTC CAUTION

CAUTION : Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the Manufacturer's instruction.

Attention: Danger d'explosion si les piles sont mal palcées. Remplacez les piles usagées uniquement par des piles de type identique ou équivalent recommandees par is fabriquant. Otez les piles usagées selon les instructions du fabriquant.

WEEE Symbol Information

Correct disposal of this product (Waste Electrical & Electronic Equipment)

(Applicable in countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

India Only

For more information on safe disposal and recycling visit our website www.samsung.com/in or contact our Helpline numbers - 18002668282, 180030008282.

This product is RoHS compliant.

Correct disposal of batteries in this product

(Applicable in countries with separate collection systems)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material re-use, please separate batteries from other types of waste and recycle them through your local, free battery return system.

USA ONLY

BC This Perchlorate warning applies only to primary CR (Maganese Dioxide) Lithium coin cells in the product sold or distributed ONLY in California USA.
"Perchlorate Material- special handling may apply, See www.dtsc.ca.gov/hazardouswaste/perchlorate."

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website: www.samsung.com/recyclingdirect Or call, (877) 278-0799

For battery recycling go to call2recycle.org; or call 1-877-723-1297

Samsung Packaging Take-Back Program

In partnering with select recyclers, Samsung offers packaging take-back at no cost to you.

Simply call the following number for the locations nearest you.

CRT Processing, LLC

(877) 278-0799

Kathy Severson – Logistics contact

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website:

www.samsung.com/recyclingdirect Or call, (877) 278-0799

Product Specifications

The system specifications may differ depending on the derived models. For detailed system specifications, refer to the product catalogue.

CPU (Optional)	Intel Dual-Core i3/i5/i7 Processor Intel Pentium/Celeron Processor AMD Dual Core Processor
Main Memory	Memory type: DDR3 2 SODIMM
Main Chipset (Optional)	Intel HM70 Intel HM75 Intel HM77 Intel NM70 AMD A68M
Storage Device (Optional)	SSD 7mmH SATA HDD 9.5mmH SATA HDD
Graphics (Optional)	Intel HD Graphics (Internal) Intel HD Graphics 3000 (Internal) Intel HD Graphics 4000 (Internal) NVIDIA GeForce 710M (Optimus) AMD Radeon HD 7340 (Internal) AMD Radeon HD 7310 (Internal) AMD Radeon HD 8570M (PowerXpress) AMD Radeon HD 8750M (PowerXpress)
Operating Environment	Temperature: -5~40°C for storage, 10~35°C when operating Humidity: 5~90% for storage, 20~80% when operating
AC/DC Rating (Optional)	Input: 100-240VAC, 50~60Hz, Output: 19VDC 2.1A, 19VDC 3.16A
PC Rating (Optional)	19VDC 2.1A (40W) / 19VDC 3.16A (60W)

- Optional components may not be provided or different components may be provided depending on the computer model.
- The system specifications are subject to change without notice.
- The Storage device capacity of a computer in which Recovery is installed, is represented as smaller than the product specification.
- The amount of memory that Windows can use may be smaller than the actual amount of memory available.

Registered Trademarks

Samsung is a registered trademark of Samsung Co., Ltd.

Intel, Pentium/Dual-Core/Quad-Core are registered trademarks of the Intel Corporation.

AMD, Dual-Core/Quad-Core are registered trademarks of the AMD Corporation.

Microsoft, MS-DOS, and Windows are registered trademarks of the Microsoft Corporation.

The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

All other product or company names mentioned herein are registered trademarks of their respective companies.

ENERGY STAR® Partner

As an ENERGY STAR® Partner, SAMSUNG has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

HDMI

Glossary

The Glossary lists the terminologies used in this User Guide. For terminologies other than these, look in Windows Help.

Backup

A way to save the current data to restore it later if necessary. A backup is a way to restore computer data when the data or computer is damaged.

Chargeable USB

This program enables supplying power to a specific USB port when the system is in power saving mode, hibernation mode or off.

Client

This refers to a computer that uses a shared network resource provided by a server.

DDR SDRAM (Double Data Rate Synchronous Dynamic Random Access Memory)

DRAM is a memory type whose cells consist of a capacitor and transistor manufactured at a low price. SDRAM is a memory type whose performance has been improved by synchronizing the clock with the external CPU clock. DDR SDRAM is a memory type whose performance has been improved by doubling the operating speed of the SDRAM and is widely used nowadays. This computer uses DDR SDRAM.

Device Manager

An administrative tool used to manage computer devices. You can add or remove hardware or update a device driver using the Device Manager.

DHCP (Dynamic Host Configuration Protocol)

This refers to automatically allocating IP addresses to the users on the network by the network administrators.

Direct X

An application interface developed to enable Windows application programs to access hardware devices at a very high speed. Since the operating speed of graphics, memory and sound cards must be very fast to provide high quality video and sound for games, Direct X enables faster control and interaction between applications and hardware devices. By using Direct X, the multimedia performance of Windows has been hugely improved.

Driver

Software that interacts between the hardware and the operating system. An operating system knows the hardware information and controls the hardware. In general, a driver is supplied with the corresponding hardware device.

D-sub (D-subminiature)

This is the cable connecting a general CRT monitor and the computer. Analog video is output through this cable.

DVD (Digital Versatile Disk)

DVD was developed to replace CD (compact disk). Although the shape and size of the disc are the same as that of a CD, the capacity of a DVD is at least 4.7GB while the capacity of a CD is 600MB. DVD video is digital unlike VHS (analog) video and supports MPEG2 compression and digital audio. To play a DVD, a DVD drive is required.

Firewall

A security system used to protect an internal network or intranet from external networks through an authentication procedure.

HDMI

This is a digital video / audio interface specification that transmits video and audio signals over a single cable.

Hibernation Mode

A power mode that saves all data in memory to the hard disk and turns the CPU and hard disk off. When canceling Hibernation Mode, all application programs that were running are restored to their last state.

Icon

This refers to a small image that represents a file that users can use.

IEEE802.XX

This is a set fo specifications developed by the 802 committee of IEEE for the LAN connection method called XX.

LAN (Local Area Network)

A communications network connecting computers, printers and other devices within a local area such as within a building. A LAN enables all connected devices to interact with other devices on the network. The current LAN uses the Ethernet media access control method developed in the early 1980s. To connect to an Ethernet, a network card called a LAN card, Ethernet card or network interface card is required. To exchange data between computers, a protocol is required besides the hardware equipment. Windows Vista uses TCP/IP as the default protocol.

LCD (Liquid Crystal Display)

There are Passive Matrix and Active Matrix LCD types. This computer uses the Active Matrix type LCD called a TFT LCD. Since an LCD is implemented by transistors instead of a cathode-ray tube unlike a CRT, its size can be slim. And because it does not blink, it reduces eye strain.

Network

A group of computers and devices, such as printers and scanners, connected by a communications link. A network can be either small or large and can be connected permanently through cables or temporarily through telephone lines or wireless links. The biggest network is the Internet, a worldwide network.

Network Administrator

A user who plans, configures and manages network operations. Sometimes, a network administrator is called a system administrator.

Notification Area

This refers to the right area of the Taskbar including program icons such as the volume control, the power options and the time.

Partition

This refers to the act or practice of dividing the storage space of a hard disk drive into separate data areas known as partitions. If a 100GB hard disk drive is partitioned into 2 x 50GB partitions, the hard disk drive can be used as if there are 2 hard disk drives.

PCMCIA(Personal Computer Memory Card International Association) card

This is an extended card slot specification for mobile computers such as a notebook computer. Not only a memory, device but also most peripherals such as hard disk drives, LAN cards, etc. can be connected to this card slot.

Protocol

A protocol is a set of rules used by computers to communicate with each other across a network. A protocol is a convention or standard that controls or enables the connection, communication, and data transfer between computing endpoints. It defines the data transmission procedures and the transmission medium for more efficient network functions.

Quick Launch

This refers to a toolbar that can be configured so that you can launch a program such as Internet Explorer or display the Windows Desktop with one click. You can add any icon to the quick launch area of the Taskbar and launch frequently used program by clicking that icon.

SDHC (Secure Digital High Capacity) card

This is the extension of the SD card that supports over 2GB bytes.

Server

In general, a server refers to a computer that provides shared resources for network users.

Share

This refers to setting a resource of a computer such as a folder or printer so that other users can also use it.

Shared Folder

A folder that can be used by other users on the network.

Sleep Mode

A power mode that enables computers to save power consumption when they are not being used. When a computer is in Sleep Mode, the data on the computer memory is not saved to the hard disk. If the power is turned off, the data in memory will be lost.

System File

System Files refer to files that are read and used by the Windows operating system. In general, system files must not be deleted or moved.

TCP/IPv4

This is a 4 byte (32 bit) address system separated into each byte (8 bits) by a dot and each byte is represented as a decimal number.

USB (Universal Serial Bus)

This refers to a serial interface standard developed to replace the conventional interface standards such as Serial and PS/2.

The data transmission specifications are one of the interface standards used to connect a computer to peripheral devices. These specifications include USB 1.0, 1.1, 2.0 and 3.0.

It is appropriate to support peripheral devices that require high data rates such as an AV device, secondary HDD or CD-RW. The higher the version (e.g. USB 3.0), the higher the data rate provided.

Windows Media Player

A multimedia program included with Windows. Using this program, you can play a media file, create an audio CD, listen to a radio broadcast, search and manage media files, and copy files to a portable device, etc.

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